

THE INSECT PEST SURVEY  
BULLETIN

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## THE MORE IMPORTANT RECORDS FOR MAY

From the Northern Rocky Mountain area southeast to Illinois hatching of grasshoppers has been delayed by recent rains, although mortality due to rains has been slight. A hatch of 60 percent was reported from the southern part of the grasshopper-infested territory. Campaigns are being conducted in the areas infested by Dissosteira longipennis Thos. in Colorado, New Mexico, and Texas, with migration reported from abandoned lands in New Mexico.

The Mormon cricket has largely hatched and control operations have been started in Utah and Nevada.

The cool, rainy weather east of the Rocky Mountains has been conducive to cutworm injury, and reports of unusual abundance have been received from almost every State.

The armyworm infestation reported last month has extended to include Oklahoma and Missouri, southern Illinois and Indiana, western and central Kentucky, and western Tennessee. In these areas the caterpillars are damaging small grains, corn, and pasture. Moths were observed throughout Ohio, Indiana, and Illinois, and also in Utah, New York, and Maine. An additional small area where damage is occurring extends from northeastern North Carolina, along the Atlantic coast through Virginia and Maryland.

The cool weather accompanied by frequent rain has been unfavorable to chinch bug development and damage this year is as yet undeterminable. The insect was reported in scattered locations in much of the chinch bug belt, where damage is anticipated in occasional areas.

The hessian fly has been favored by the spring weather and populations have built up considerably, resulting in some damage to wheat.

The corn ear worm was reported injuring sweet corn and tomato in South Carolina, Mississippi, Louisiana, and California. Moths were observed at New Brunswick, N. J., on May 13.

The codling moth began emerging earlier than usual, being observed the last week in April along the Ohio River and in northeastern Kansas and northwestern Missouri, also in the Middle Atlantic States. The peak of moth emergence occurred the first week in May. Cool, wet weather delayed development, but some hatching and a few entrances were observed by the middle of the month. The first adults were observed on May 17 and 18 in New York. In the Yakima Valley, Wash., the emergence started about the same time as in the eastern part of the country.

The rosy apple aphid is more abundant than usual in the Middle Atlantic States and in the Ohio Valley. The other species of apple aphids are occurring in only moderate abundance. The black peach aphid is more abundant than usual in the Middle Atlantic States.

Flea beetles are very abundant on and injurious to truck crops over the entire country.

The Colorado potato beetle is appearing earlier than usual and is causing considerable injury over the Middle Atlantic States and in the Mississippi and Ohio Valleys. The insect was also reported from southeastern Idaho, where it has never been observed before.

The Mexican bean beetle is coming out of hibernation earlier than usual. Egg masses were found on May 5 in southern Indiana.

The pea aphid is very abundant along the Atlantic coast from Virginia to New York; however, it is not so injurious as it was last year. Considerable injury to peas is occurring in southern Wisconsin and Illinois and to alfalfa in the Western States.

Boll weevils were moderately abundant in the field over most of the Cotton Belt.

The cotton leaf worm appeared in Texas earlier than usual.

Thrips of many species are unusually abundant on truck crops, cotton, and flowers over most of the country.

GENERAL FEEDERS

GRASSHOPPERS (Acrididae)

Illinois. W. P. Flint (May 23): There is less than 25-percent hatch in the sand areas and not more than 5 percent in other areas in central Illinois. The numbers of hoppers are not great enough to cause serious damage.

Michigan. R. Hutson (May 26): Camnula pellucida (Scudd.) is hatching all over the northern end of the Lower Peninsula and beginning to hatch in the Upper Peninsula. Hatching began in the week of April 18 in favored locations throughout the Lower Peninsula. Hatching of Melanoplus mexicanus (Sauss.) and M. femur-rubrum (Deg.) did not begin until a week to 10 days after the time when Camnula was first observed. Cold weather during the week beginning May 16 practically eliminated nymphs of all species hatched prior to that time. A sufficient reserve of eggs remains to form the basis for a heavy infestation.

Minnesota. A. G. Ruggles (May 19): Less than 1 percent of red-legged grasshopper and the two-striped (Melanoplus bivittatus Say) have hatched.

Iowa. C. J. Drake (May 27): Heavy rains and cool weather have greatly delayed grasshopper hatching. In central Iowa incubation is just beginning and not over 10 percent of the eggs have hatched in the southernmost counties. Late fall plowing of infested clover fields did not materially affect grasshopper eggs. Populations of over 200 young hoppers per square yard have been found in newly seeded alfalfa fields in a number of counties.

H. E. Jaques (May 25): Grasshoppers are now hatching in large numbers throughout much of southern Iowa.

Missouri. L. Haseman (May 23): Conditions have been decidedly unfavorable for grasshoppers during the second half of May. It was indicated that 50 percent or more of the lesser migratory eggs (M. mexicanus) hatched during the first few days in May, but hatching has slowed down in the last 2 weeks and conditions have not favored the young nymphs. Eggs of the differential grasshopper (Melanoplus differentialis Thos.) are still largely unhatched. In some places the lesser migratory nymphs are half grown or larger.

North Dakota. J. A. Munro (May): Hatching has been general throughout the State, with more than 75 percent of the eggs hatched in southwestern counties. Crop injury to alfalfa, sweetclover, and cereals reported in southern counties. A week of cool, rainy weather has retarded hatching and feeding activities.

South Dakota. H. C. Severin (May 20): Eggs of M. mexicanus were the first to hatch. It is estimated that as high as one-third of the



eggs are hatched in some localities. The first damage was reported on May 10 in Marshall County by first- and second-instar nymphs. The first damage caused by M. bivittatus was reported on May 12 from the northern and western sections of the State.

Nebraska. M. H. Swenk (May 20): Grasshopper eggs began hatching freely early in May, and probably from 25 to 30 percent have hatched. Heavy populations are developing in many localities.

Kansas. H. E. Hungerford (May 23): Young grasshoppers are beginning to be generally troublesome in flower gardens.

J. R. Horton (May 3): The first grasshoppers hatched around Wichita were seen during the last week of March. Only individuals and small groups have been seen as yet and there is no damage to spring wheat, which has been above ground only a few days.

Arkansas, Oklahoma, and Texas. W. E. Dove (May 14): All species are at least 60 percent hatched, being confined for the most part to field margins and original hatching grounds. Different species were found as follows: M. mexicanus in the fourth and fifth instars and as adults; M. differentialis in the first, second, and third instars; M. bivittatus in the third, fourth, and fifth instars; and Disosteira longipennis Thos. in the first instar.

Oklahoma. F. A. Fenton (May 20): The grasshopper infestation promises to be more serious in many localities than the infestation last year. In places in Kay County M. mexicanus occurs at the rate of 100 per square foot. M. confusus Scudd. is in the adult stage and is very abundant in some places.

C. F. Stiles (May 25): Approximately 80 percent of grasshopper eggs have hatched and reports of crop injury are being received from southwestern Oklahoma. The principal species are M. mexicanus and M. differentialis. The situation is becoming alarming in five counties, where the rainfall was light until recently.

Texas. F. L. Thomas (May 25): Grasshoppers constitute a serious threat to all crops in northwestern Texas.

Montana. H. B. Mills (May 19): In some areas approximately 40 percent of the hoppers had hatched by May 7. Hatching has been considerably retarded.

Colorado. S. C. McCampbell (May 23): Hatching has been delayed over our native hopper area, where less than 1 percent hatch has occurred. From 5- to 25-percent hatch has occurred on the warmer soils in the migratory-grasshopper area.

Arizona. C. D. Lobert (May 26): Several heavy infestations of M. mexicanus in alfalfa were observed during the middle of May in the Salt River Valley.

Idaho. J. R. Douglass (May 5): Grasshoppers were beginning to hatch in the Snake River Plains at the end of April.

Utah. G. F. Knowlton (May 12): Hatching has been noticed in fields in northern Utah. (May 14): Hippiscus corallipes (Hald.) is now adult in the foothills of Tooele, Juab, and parts of Millard Counties, in central Utah. (May 23): Grasshoppers are beginning to damage alfalfa and pasture lands in southwestern and south-central Utah.

MORMON CRICKET (Anabrus simplex Hald.)

North Dakota. J. A. Munro (May 24): Emmons County, in south-central North Dakota, is heavily infested with recently hatched Mormon crickets. These pests were also found at the rate of 300 per square yard along field margins near Reeder, in Adams County, in the southwestern part of the State.

South Dakota. H. C. Severin (May 20): Mormon cricket eggs began hatching on April 19 in Lyman County, in south-central South Dakota, and on May 20 in Butte County, in the west-central part of the State. No damage reported as yet.

Montana. H. B. Mills (May 19): Mormon crickets have largely hatched in the lower areas and indications are that they will be as abundant, if not more so, than they were last year.

Utah. C. J. Sorenson (May 19): Mormon crickets have occurred in numbers menacing to agricultural crops in Juab, Millard, and Tooele Counties in west-central Utah. Crop damage is being prevented by control measures.

Nevada. G. G. Schweis (May 5): Mormon crickets have hatched on the lower and intermediate elevations in eastern Nevada and control work was started on a large scale on May 5.

CUTWORMS (Noctuidae)

Maine. H. B. Peirson (May 10): The variegated cutworm (Lycophotia margaritosa saucia Hbn.) was doing severe damage to greenhouse plants in Bar Harbor.

New Jersey. J. B. Schmitt (May 24): Cutworms are becoming serious in Burlington County, some cornfields showing 10-percent destruction.

Delaware. L. A. Stearns (May 19): The death of 70 percent of a new planting of peaches near Bridgeville is attributed to girdling of the young trees by cutworms. The field had been in watermelons in 1937 and cutworms had been abundant then.

Maryland. E. N. Cory (May 24): Cutworms have been damaging tobacco in Calvert County.

Virginia. H. G. Walker and L. D. Anderson (May 25): Cutworms have been unusually abundant near Norfolk since the latter part of April. They have cut off a great many tomato, bean, and corn plants, and have been very numerous in alfalfa fields.

South Carolina. J. G. Watts (May): An unidentified cutworm has been found in great abundance in a field of soybeans near Blackville, in the southwestern part of the State. The beans followed rye and vetch, planted as a winter cover crop. A maximum of 21 cutworms was found around a single hill. The same species has been found in much smaller numbers damaging cotton, corn, and tomatoes.

Georgia. O. I. Snapp (May 18): Near Fort Valley, in central Georgia, cutworms have destroyed 50 acres of young corn, planted after Austrian winter peas had been plowed in, and also damaged cotton and peppers under the same conditions. Truck crops in the same locality are damaged.

G. F. Moznette (May 19): Cutworms are destroying corn, peanuts, and cotton in scattered fields in the vicinity of Leary. Infestations are most severe where winter cover crops of vetch and Austrian peas have been plowed under, as many as 12 larvae being taken from a single peanut plant.

T. L. Bissell (May 23): Cutworms, possibly the variegated cutworm, have seriously injured one field of cotton at the experiment station and are less injurious in two other fields. These fields were planted after vetch and the same cutworm is found around vetch plants not yet plowed.

Indiana. J. J. Davis (May 23): Cutworms have been rather general throughout the State, attacking a wide range of crops, principally garden crops.

Ohio. T. H. Parks (May 19): The first serious outbreak of the bronzed cutworm (Nerhelodes emmedonia Cram.) since 1925 was brought to our attention on May 13, when it was found to be destroying bluegrass in permanent pastures in eastern Franklin and western Licking Counties, in central Ohio. About 35 acres of bluegrass had been eaten close to the ground in one large pasture field by May 17. The line of demarcation between the infested and uninfested parts of the field was very distinct. At this point the larvae were massed beneath the grass and were progressing slowly into the new feeding grounds, destroying the grass as they went. Most of the larvae were about full-grown and would soon become quiescent. By May 15 many of the worms had been killed by a bacterial disease and by May 19 the outbreak was subsiding.

Illinois. W. P. Flint (May 23): Cutworms of various species particularly the black (Agrotis ypsilon Rott.) and the clay-backed (Feltia gladiaria Patch) have been causing generally serious losses to early planted corn. The injury has been complicated by the fact that the variegated cutworm (L. margaritosa) and the true armyworm



(Cirphis unipuncta Haw.) are present in equal numbers and the rank growth of clover in many fields has prevented success with control measures.

Michigan. R. Hutson (May 26): Cutworms have been reported active in the following localities: Parastichtis bicolorago Guen. in the vicinities of Parma and South Haven; Nephelodes emmedonia Cram., South Haven; Paragrotis scandens Riley, Albion, Parma, South Haven, Lawton, Paw Paw, Saint Joseph, Berrien Springs, Grand Rapids, and Fennville; Agrotis c-nigrum (L.), Parma; Agrotis unicolor (Walk.), Muskegon Heights and Manistee; and Feltia ducens (Walk.) at Parma, Albion, Coldwater, Niles, Berrien Springs, Paw Paw, Saugatuck, Fennville, Allegan, and Grand Rapids.

Alabama. J. M. Robinson (May 19): The variegated cutworm was causing damage on May 11 to young cotton after the cutting of alfalfa on the northern border of the State. New hay being shipped into Birmingham from southern Missouri was found infested with the insect. (May 26): Cutworms, destructive to cotton following the turning of winter legumes, have become active in several counties in east-central Alabama. The larvae of this insect have destroyed several thousand acres of cotton.

Tennessee. G. M. Bentley (May 24): Serious losses are reported from many parts of the State from different species of cutworms, as well as from the armyworm. The variegated cutworm has been causing the most damage. The first recorded appearance of cutworms was on May 5. The outbreak has been the most pronounced in western Tennessee.

Mississippi. C. Lyle (May 24): On May 18 cutworms were reported by G. L. Bond, of Moss Point, as unusually abundant in his district. Crops of various kinds, as well as ornamental plants, have been severely damaged. M. L. Grimes, of Meridian, and N. D. Peets, of Brookhaven, reported considerable injury in their districts. Specimens of Prodenia ornithogalli Guen., accompanied by reports of light-to-medium damage to young cotton, were received in May from Adams, Holmes, Franklin, Lauderdale, and Marion Counties. (May 9): The variegated cutworm is causing some damage in the Delta area on cotton planted following winter legumes, but the injury is small where planting was delayed until 2 or 3 weeks after turning under the winter cover crop.

Louisiana. C. O. Eddy (May 23): Cutworms have been abundant throughout the State.

Kansas. H. R. Bryson (May 28): The pale western cutworm (Porosagrotis orthogonia Morr.) was reported to be abundant at Liberal and Gen on May 12.

Iowa. C. J. Drake (May 27): Cutworms of various species are common in Iowa and are doing a considerable amount of damage throughout the State, particularly in gardens and truck fields. A few infestations reported in corn.

Missouri. L. Haseman (May 23): A rather severe and general cutworm infestation has been associated with the armyworm outbreak. The greasy cutworm is predominant in some areas, though in most collections the variegated cutworm is more abundant. Garden crops, as well as field crops, have been severely damaged.

North Dakota. J. A. Munro (May): Reports from infested areas indicate that most of the larvae of the army cutworm (Chorizagrotis auxiliaris Grote) have completed development and are in the pupal stage. A few moths have been taken recently at lights. The pale western cutworm is becoming active in the western part of the State, but no serious damage has been reported. A field in Golden Valley, examined on May 7, showed more than 25 larvae per square foot, most of them being in early instars.

South Dakota. H. C. Severin (May 20): Cutworm damage is being prolonged and intensified by the cold, wet weather prevailing. The army cutworm is responsible for a considerable amount of the damage done.

Kansas. J. R. Horton (May 3): First adults of the season of the army cutworm were seen on April 29 in the vicinity of Wichita. At present they are a little more in evidence, occurring in houses as well as in the field, although only scattered individuals have been seen. (May 21): Moths of the army cutworm are probably at their maximum emergence. Their numbers are larger than at any time in several years.

H. B. Hungerford (May 23): Cutworm complaints have been numerous.

Nebraska. M. H. Swenk (May 20): The western army cutworm was reported attacking winter wheat and alfalfa in Keith County on April 26, and a similar complaint came from Dawson County on the same date. Moths of this species have been abundant all over the State during May. The dingy cutworm (Feltia subgothica Haw.) and dusky cutworm (F. venerabilis Walk.) have been reported as injurious in eastern Nebraska gardens in May.

Colorado. S. C. McCampbell (May 23): Army cutworms have been especially bad during the last 3 weeks in gardens in northeastern Colorado, but little injury to field crops has been reported. A few moths are flying.

Utah. G. F. Knowlton (May 3): Reports of cutworm abundance and injury, especially to alfalfa, are received almost daily from different localities in Millard County. (May 4): Young cabbage plants in coldframes are reported as damaged by cutworms at Morgan. (May 10): Moths of the greasy cutworm are now coming to trap lights at Cedar

City, in Iron County. (May 17): Reports of cutworm injury to young sugar beets have been received from Sevier County. (May 20): A farmer at Green River reports losing half his sugar-beet stand from cutworm damage this spring. (May 23): Cutworm injury held back alfalfa growth for several weeks on many farms on Milford Flats. Damage to fall wheat was serious on a number of farms. Most of the larvae have pupated.

Nevada. G. G. Schweis (May 17): Cutworms were observed attacking various ornamental plants on May 17. They were also observed damaging fields of alfalfa at Fallon and Lovelock early in May.

Washington. K. E. Gibson (May 20): Cutworms were damaging a 4-acre field of asparagus near Walla Walla to such an extent that cutting had been practically stopped. Stalks were being cut off at the soil surface or just below, and other stalks were cut off from 2 to 3 inches above the soil. Other damage was done through chewing of the stalks until they were deformed.

#### BEEET WEBWORM (Loxostege sticticalis L.)

Colorado. G. M. List (May 28): Moths are fairly numerous on the lawns and about the lights at Fort Collins.

Utah. G. F. Knowlton (May 23): Moths observed in alfalfa fields in southwestern Utah.

H. E. Dorst (May 28): No moths of the sugar beet webworm have been observed in sugar beet fields in central Utah despite the enormously high population in 1937.

#### WIREWORMS (Elateridae)

Connecticut. A. W. Morrill, Jr. (May 17): Larvae of Limonius agonus Say have been found attacking potatoes and radishes for over a month, in fairly large numbers in some fields in Hartford County. Adults have recently been found on radishes just below the ground line and on potatoes planted as test baits in fields being prepared for tobacco.

Maryland. E. N. Cory (May 4): Wireworms have been reported damaging tomatoes in Somerset County.

Florida. H. T. Fernald (May): Elaterids have been numerous at lights in Winter Park.

Louisiana. C. O. Eddy (May): Wireworms are reported to be very injurious on cotton and corn in northern Louisiana.

Iowa. H. E. Jaques (May 25): Wireworms are beginning to do serious damage to corn in southeastern Iowa.



- Kansas. H. R. Bryson (May 28): A small wireworm, Aeolus elegans F., was reported causing injury to wheat at Ashland on April 28.
- Idaho. F. H. Shirck (May 17): Several fields of onions in the locality of Parma have been damaged by L. californicus Mann. The injury began about May 10 and amounts to a thinning of stands.
- Nevada. G. G. Schweis (May 10): Wireworms were reported as damaging gardens in Reno on May 10.
- Washington. E. W. Jones (May 20): Adults of the sugar beet wireworm reached their peak of emergence at Walla Walla on May 10. The first emergence at Walla Walla of Athous pallidipennis Mann. occurred on May 9. This species was found to have transformed from overwintering larvae in April.
- Oregon. M. C. Lane and H. P. Lanchester (May 20): Extensive damage to fall, spring, and resown spring wheat was noted near Athena, in northeastern Oregon. In one field of spring wheat 84 acres were replanted, owing to complete loss of the stand through wireworm feeding. The infestation was primarily the sugar beet wireworm.
- California. M. W. Stone (May 18): Lima beans planted early in May were damaged to the extent that replanting was necessary in several fields in Orange County. Siftings made in bean rows in a field near Smeltzer on May 17 showed an average population of 1.2 and as many as 2.4 wireworms per foot. In the wireworm plots near Downey, in Los Angeles County, an average of 3.9 larvae per foot were recovered in rows of field corn, and an average of 8 larvae per foot in seed-potato rows.

#### WHITE GRUBS (Phyllophaga spp.)

- Vermont. H. L. Bailey (May 28): The first adult was noted at Montpelier on May 22, but beetles have been very scarce.
- Connecticut. E. P. Felt (May 24): June beetles (P. tristis F.) were reported defoliating oaks at Middlebury.
- Mississippi. C. Lyle (May 24): On May 10 a grower at Meridian, in Lauderdale County, reported considerable damage to pecan trees by P. hirticula (Knoch), P. micans (Knoch), P. crenulata Froel., and P. praetermissa Horn. The last was also reported as doing severe damage to oak trees at Houston, in Chickasaw County.
- Wisconsin. T. R. Chamberlin and assistants. (May 23): The first flight of June beetles near Madison occurred on April 25. A rather large flight was observed near Dane, in Dane County, on April 26. Flights thereafter were materially reduced until May 18, because of cold, rainy weather. A small flight was observed near Leeds in Columbia County, on May 13, with the temperature at only



48° F., the lowest temperature at which we have seen beetles emerge in any numbers. All the beetles taken belonged to the species P. fusca (Froel.). This species, together with P. tristis, has been the first to emerge in the spring during the last three seasons, probably because it flies at lower temperatures than most other species in this territory. Beginning on May 18, temperatures have been somewhat higher and the size of the flights has increased.

Minnesota. A. G. Ruggles and assistants. (May): May beetles are quite abundant in the eastern and southern sections of the State.

Iowa. H. E. Jaques (May 25): May beetles of several species are flying in extraordinary numbers on warm nights. Elms and some other forest trees are showing evidences of defoliation.

Kansas. H. R. Bryson (May 28): The wheat white grub (P. lanceolata Say) was reported on May 5 as having destroyed approximately 500,000 acres of wheat in southern and central Kansas.

Oklahoma. R. G. Dahms (May 23): Adults of P. lanceolata are very abundant in many wheatfields in southwestern Oklahoma. Although observed feeding on leaves of Sudan grass, they appear to be doing little damage.

Oregon. M. C. Lane (May 20): Numerous females of P. anxia Lec. were flying to lights on May 10 at Ontario.

#### JAPANESE BEETLE (Popillia japonica Newm.)

Connecticut. J. P. Johnson (May): Grubs of the Japanese beetle have been feeding on the roots of grass in New Haven, Bridgeport, Stamford, and Greenwich, causing considerable injury.

Delaware. L. A. Stearns (May 23): Severe damage to untreated lawns in New Castle County, with counts showing a grub population of from 20 to 30 per square foot.

Maryland. H. P. Boyd (May 19): Worms found under patches of dead grass in lawns at Perryville.

#### ORIENTAL BEETLE (Anomala orientalis Wtrh.)

Connecticut. J. P. Johnson (May): The grubs of this insect have been feeding extensively in New Haven, Bridgeport, Stamford, and Greenwich. Lawn injury has been increasingly evident.

New Jersey. E. G. Brewer (May 27): Investigation of a reported severe injury to a 5-acre lawn on an estate at Oakland, in Bergen County, disclosed extensive grub feeding by A. orientalis. Approximately  $\frac{1}{4}$  acre of sod had been completely destroyed. There was a high grub population throughout the lawn. All larvae examined were of the same species.

A SCARABAEID (Ochrosidia villosa Burm.)

Connecticut. J. P. Johnson (May): Grubs of this insect have been found in increasing numbers in Norwalk and Greenwich. It is evidently spreading and building up in strength. Some winter killing of the grub stage was evident upon examination.

ASIATIC GARDEN BEETLE (Autoserica castanea Arrow)

Connecticut. J. P. Johnson (May): Grubs of this insect have been feeding extensively in New Haven, Bridgeport, Stamford, and Greenwich. Lawn injury has been increasingly evident.

ROSE CHAFER (Macrodactylus subspinosus F.)

Delaware. L. A. Stearns (May 17): First adults of the season observed on young peaches in Sussex County on May 17.

Tennessee. G. M. Bentley (May 24): The rose chafer has been found at Crossville, in Cumberland County, and at Wartburg, in Morgan County, on potatoes. It is occurring in large numbers, comparable to a medium-sized swarm of bees.

WHITE-FRINGED BEETLE (Naupactus leucoloma Boh.)

Alabama. E. M. Gaddis (May 9): The white-fringed beetle was emerging the first week of May.

Mississippi. J. B. Gill (May 24): The first pupae of Naupactus sp. from insectary material were obtained on May 6. It is also interesting to note that the first pupae collected in the field were taken on this same date. Up to May 24 no adults have been found feeding on the foliage of plants in the field. However, two well-developed adults were dug out of the soil—one on May 17 and one on May 20. The larval injury to the roots and tubers of plants by Naupactus sp. is apparently quite similar to that of N. leucoloma.

FALSE CHINCH BUG (Nysius ericae Schill.)

Michigan. R. Hutson (May 26): False chinch bug has been observed at White Cloud, Muskegon, Manistee, and other points in the grasshopper infested region of last year.

Utah. C. J. Sorenson (May 19): The false chinch bug is abundant in meadow lands and alfalfa fields near Whiterocks, in Uintah County.

H. E. Dorst (May 28): A very low population of the false chinch bug is present on range land adjacent to northern Sevier Valley, as compared to the high population in 1937.

C E R E A L   A N D   F O R A G E - C R O P   I N S E C T S

WHEAT AND OTHER SMALL GRAINS

ARMYWORM (*Cirphis unipuncta* Haw.)

Maine. H. B. Peirson (May 10): An unusually large number of moths flying at Bar Harbor, in southeastern Maine.

New York. N. Y. State Coll. Agr. News Letter (May 31): Moths found in large numbers nightly during the last 9 days at Ithaca and Oswego, in western New York, indicate the possibility of an outbreak. The number caught is reported to be 100 times that of average years, from 10 to 50 moths being seen at times on 1 baited tree.

Virginia. H. G. Walker and L. D. Anderson (May 25): Armyworms were very abundant and destructive in a great many alfalfa, small-grain, and cornfields in eastern Virginia during the latter part of April and the first part of May. (May 31): Moths of the second generation observed at lights near Norfolk on May 29 and 30.

Maryland. E. N. Cory (May 17): A serious outbreak reported from Somerset County on the Eastern Shore. The worms are attacking oats, barley, pasture land, and the buds of young strawberry plants.

North Carolina. C. S. Brimley (April 29): This pest is reported damaging wheat in Halifax County, in the northeastern part of the State.

Ohio. T. H. Parks (May 24): Moths are being captured commonly at Columbus, in south-central Ohio, in a light trap and in bait pans used to trap codling moths.

Indiana. J. J. Davis (May 23): Outbreaks were anticipated because of the appearance of moths in abundance in many parts of the State some 5 or 6 weeks ago. We received a report on May 11 of a general outbreak in Martin County, in the south end of the State. No further reports have been received.

L. F. Steiner (May 9): An outbreak is occurring adjacent to one local orchard in Vincennes, in southwestern Indiana.

Illinois. W. P. Flint (May 23): As expected, armyworms have been hatching in the southern and south-central parts of the State during the last 2 weeks and are now hatching in numbers in the central part.. The injury has been complicated by the fact that the variegated cutworm (*Lycophotia margaritosa saucia* Hbn.) and the true armyworm are present in about equal numbers and the rank growth of clover in many fields has prevented successful control of the former. Very few parasites have been present.

Kentucky. W. A. Price (May 28): Spring armyworms appeared in scattered sections over the central and western parts of the State.



Tennessee. G. M. Bentley (May 24): There have been serious losses in many parts of the State from the armyworm.

Missouri. L. Haseman (May 23): During the first half of the month a severe outbreak of armyworms was reported from the Arkansas line almost to the Missouri River, especially throughout most of the southeastern counties. On some farms the infestation was more severe than a year ago, with fields of wheat, pastures, and meadows practically stripped. Heavy baiting in that area has been carried on. Since May 15 in central and northern Missouri the worms have reached the stage of development where they have been attracting considerable attention, although, from the Missouri River to Iowa, the infestation is much less severe than a year ago except on scattered farms. At Columbia most of the armyworms are approximately half grown, with occasionally a very small caterpillar and an almost full-grown specimen. Development is much more uneven than a year ago and in northern Missouri it now appears that the injury will be far less than in 1937.

Oklahoma. F. A. Fenton (May 20): The infestation in Oklahoma parallels last year's outbreak in intensity. Certain areas report much greater damage than last year, while the reverse is true in others. Actual damage to wheat this year is believed to be greater than last year because the armyworms were forced to feed on the heads at an earlier date because rust has destroyed most of the leaves.

Utah. G. F. Knowlton (May 25): Moths were coming in numbers to the trap light at Cedar City on May 10.

#### CHINCH BUG (Blissus leucopterus Say)

Indiana. C. Benton (May 23): Spring flight from hibernation to small grain near La Fayette was practically completed by May 1, most of it taking place during the last 10 days in April. The cold wet weather last month has been unfavorable for chinch bug development, although considerable mating and other activity has been observed on warm days. General infestation of winter wheat and rye in this locality has been light; but, as the bugs are now deserting the ranker wheat and concentrating in the thinner stands, occasional concentrations can be found that will produce moderately severe infestations if weather conditions are favorable. Some eggs and a few-first-instar nymphs, the first observed this season, were seen in spring barley near La Fayette on May 21.

Illinois. W. P. Flint (May 23): Chinch bugs were present in small grain, particularly barley, thin wheat, and oats. The infestation, while scattered, is very severe in some of the southern, south-central, and central areas. For the last 10 days frequent rains have considerably reduced the numbers of adult bugs, and will certainly lessen the damage.



Iowa. C. J. Drake (May 27): Chinch bugs occur in threatening numbers in the two southern tiers of counties in Iowa and are found occasionally in the third tier. The infestation is spotted and is, perhaps, comparable to the infestation in the spring of 1934. Unless weather holds the insects in check, many fields of small grain will be badly injured.

Missouri. L. Huseman (May 23): Only in scattered areas of the State are the farmers reporting any concern about chinch bugs. Excessive rainfall, which has covered most of the State this month, has tended to check chinch bug spread and development.

Kansas. H. R. Bryson (May 28): Chinch bugs are quite scarce in most sections, but are abundant in barley fields in eastern Kansas. This may or may not be an indication of actual population. Young bugs appeared in southern Kansas before the middle of May.

Oklahoma. F. A. Fenton (May 20): Chinch bugs reported at following localities in the central part of the State: Britton, in Oklahoma County; Stroud, in Lincoln County; and Bristow, in Creek County.

R. G. Dahms (May 23): Infestation seems to be very spotted in southwestern Oklahoma. Bugs are especially abundant in spring barley. The first nymphs were found on May 5. Eggs have hatched very rapidly during the last week, and there are many nymphs in the first and second instars, and a few in the third. The overwintered adults are still laying eggs.

#### MEADOW PLANT BUG (Miris dolabratus L.)

Indiana. J. J. Davis (May 23): Meadow plant bug reported attacking wheat more or less generally in Rush County, in central Indiana, on May 13; and, from general reports, it is apparently rather prevalent in other areas. Reported from Huntington County on May 23.

#### GREEN BUG (Toxoptera graminum Rond.)

Oklahoma. F. A. Fenton (May 20): Green bug in wheat reported from Willow, in southwestern Oklahoma, and in oats from Coyle, in the south-central part.

#### APHIDS (Aphididae)

Kansas. J. R. Horton (May 3): Aphids (spring grain aphid?) have been slowly increasing in wheat in the vicinity of Wichita for about a month. They are now numerous enough to be noticed on casual inspection of wheat. Perhaps 100 percent of plants in lowland situations harbor one or more small groups of individuals. Winged forms are still very scarce.

A LEAF BUG (Labops hirtus Knight)

Montana. H. B. Mills (May 26): This little leaf bug is rather abundant in Big Horn and Carbon Counties, in south-central Montana. On one ranch southeast of Hardin, it is doing serious damage to a small area of winter wheat and a large area of range land.

HESSIAN FLY (Phytophaga destructor Say)

Indiana. W. B. Cartwright and C. Benton (May 23): Most of the spring brood of hessian fly emerged during the latter half of April in the vicinity of La Fayette. Most of the egg laying occurred between April 20 and May 1. A few eggs were still found on May 7 during the regular weekly examination. Several full-grown larvae were found on April 29 and first puparia on May 7. By May 14 about 20 percent of the larvae had pupated and 87 percent on May 20. With unusual early development of the flies it appears that some supplementary brood may result if weather conditions continue favorable. On May 20 examination of 100 puparia from near Delphi showed 3 percent pupated. Examination of a number of winter wheat-fields in Benton and Tippecanoe Counties, in west-central Indiana, shows considerable fly infestation by the spring brood, even in those fields seeded last fall after the safe date. The cool wet spring has been favorable for a rather general build-up of fly infestation. In a number of fields the infestation is severe enough to reduce the yield materially.

Michigan. R. Hutson (May 26): A field of wheat containing approximately 20-percent infestation of hessian fly was found at Hillsdale, in southern Michigan. Other fields in the vicinity were less heavily infested.

EUROPEAN WHEAT STEM SAWFLY (Cephus pygmaeus L.)

Pennsylvania. E. J. Udine (May 21): On this date the adults were numerous in wheatfields at Carlisle, in the south-central part of the State.

STRAW WORM (Harmolita grandis Riley)

Indiana. C. Benton (May 23): About 5-percent infestation observed in several winter wheatfields in Benton and Tippecanoe Counties. Infested plants examined from May 15 to 20 showed pupae in galls, both honey-yellow and black-colored. A few adults were active in the fields.

JOINT WORM (Harmolita tritici Fitch)

Indiana. C. Benton (May 20): One field of winter wheat near La Fayette showed a slight infestation (estimated about 1 percent). The infested stalks were starting to head, most of them were beaten to the ground, and showed the characteristically swollen stems.

CLOVER MITE (Bryobia praetiosa Koch)

Oklahoma. R. G. Dahms (May 23): The brown wheat mite (probably B. pratensis) did serious damage to wheat in southwestern Oklahoma during the last week of April and the first 10 days of May.

CORN

CORN EARWORM (Heliothis obsoleta F.)

New Jersey. J. B. Schmitt (May 24): The first moths were found in the vicinity of New Brunswick, in northeastern New Jersey, on May 13.

South Carolina. J. G. Watts (May 5-25): Corn earworms were observed at Blackville, in the southwestern part of the State, feeding on corn prior to tasseling and on the ears in the milk stage.

Georgia. T. L. Bissell (May 31): Five moths caught in light traps on May 30. This is a considerable increase, indicating emergence of first-generation moths. Worms are already damaging tomatoes here at Experiment, in central Georgia, and at Clarkston in De Kalb County, northwestern Georgia. They are feeding in small fruits and on leaves.

Mississippi. G. L. Bond (May 24): Severe damage to both corn and tomatoes was recently observed at Moss Point, in southern Mississippi.

Louisiana. C. O. Eddy (May): Tomato fruitworms are active on corn and tomatoes in the State.

Texas. R. W. Moreland (May 28): Injury to buds of corn has been light in Brazos and Burleson Counties. Corn has begun to silk and on 100 plants examined 58 eggs were found on 4 silks. The first eggs were found on cotton on May 23 at College Station.

California. J. Wilcox (May 2): About 20 percent of the tassels in this early sweet corn field at Olive, in southern California, were damaged. Eggs and small larvae were numerous and a few mature larvae were found. On May 10 examination was made in the same field and 50 percent of the ears were found infested with from one to four larvae each. Most of the larvae were in the first, second, and third instars and a few larger worms were found.

EUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

Massachusetts. A. I. Bourne (May 24): We have found that pupation of the European corn borer began the first week of May in Hampden County, in the lower Connecticut Valley, and moths were emerging by May 15 or 16. In the upper Connecticut Valley counties and in Worcester County, in the central part of the State, development was about 10 to 14 days later, but our observations have shown a great variation in the development according to the location of the



larvae. In corn that remained in the stacks, or was stored in sheds and has not yet been disposed of, we found that very little pupation has taken place, whereas in unplowed fields or where corn refuse has been allowed to remain on the top of the soil practically all the larvae have pupated. It is expected that this will interfere considerably with the program of insecticide treatment for corn borer in early sweet corn, which many growers are planning to undertake this season, as it is certain that moth emergence and appearance of the larvae will be extended over a much longer period than usual, owing to this unevenness of pupation.

Connecticut. M. P. Zappe (May 21): Many overwintering larvae are now in the pupal stage. A few adults have emerged from cornstalks and stubble on light sandy soil.

New York. L. A. Carruth (May 18): Examinations of corn stubble in Nassau County, on Long Island, during the first half of May indicate an average survival of approximately 25 borers per 100 stubbles, although in some fields the survival was considerably higher. At the present time approximately 80 percent of the larvae that survived the winter in corn stubble have transformed into pupae. Very little moth emergence has been observed. Approximately 40 percent of the larvae which survived the winter in cornstalks in barnyards in Nassau County have transformed to pupae.

New Jersey. C. A. Clark (May 20): Spring pupation of the borer advanced very rapidly during the latter part of April and early in May. Moths started to emerge early in May and counts indicated from 16- to 42-percent emergence in Monmouth and Burlington Counties. by May 19. Egg deposition has been delayed by low temperatures at night.

J. B. Schmitt (May 24): Emergence of the European corn borer is about 60 percent in southern New Jersey and about 15 percent in the northern part of the State.

#### ALFALFA

##### PEA APHID (Illinoia pisi Kltb.)

New Jersey. J. B. Schmitt (May 24): Outbreaks in New Jersey are serious in dairying sections, and wherever alfalfa is grown, and are accompanied by pea mosaic. In areas away from alfalfa the aphid is not a serious problem.

Illinois. W. P. Flint (May 23): Pea aphids have been building up in large numbers in red clover, sweetclover, and alfalfa fields. The infestation in peas has occurred and reproduction has been taking place for more than a week.

Colorado. S. C. McCampbell (May 23): This aphid has been especially abundant in the Canon City district of Fremont County, just southeast



of the Pikes Peak area. We have also had a few reports from the western slope of Colorado, in Delta County. Ladybird beetles and syrphid fly larvae are abundant and are expected to control this outbreak soon.

Idaho. R. W. Haegle (May 19): Heavy infestations of pea aphid are common in alfalfa fields throughout southwestern Idaho, where serious damage is occurring in many fields.

Utah. G. F. Knowlton (May 13): Pea aphids are abundant on alfalfa and are becoming established on peas in the Salt Lake City area. They are somewhat less abundant in northern Utah. In Beaver County, in southwestern Utah, 40 acres of alfalfa are reported as destroyed and 100 acres more as severely damaged. (May 27): Pea aphids have reduced the first crop of alfalfa by approximately 50 percent in Davis County (according to the County Agent's estimate). Damage in Salt Lake and Utah Counties, especially on the bench lands, has been nearly as severe. Damage is serious in several alfalfa fields at Salina, in central Utah.

Nevada. G. G. Schweis (May 19): Alfalfa aphids were reported as severely damaging alfalfa in western Nevada on May 19.

Oregon. M. M. Recher and L. P. Rockwood (May 21): Some fields of early fall sown vetches and Austrian winter field peas were seriously damaged throughout the Willamette Valley, in northwestern Oregon, late in April and early in May. By May 12 aphids were checked severely and almost eliminated by a fungus disease. Deficient precipitation since May 12, with very low night humidities on May 13 and 14, has checked the spread of these diseases, especially on Austrian peas, and aphids have increased rapidly. Syrphid eggs and larvae are becoming abundant. Some fields seeded about November 1 do not yet show damaging populations.

California. A. E. Michelbacher (May 20): The pea aphid has been rather abundant on alfalfa during the entire growing season. It was particularly bad in the San Joaquin Valley. A brief review of what occurred follows: If the pea aphid is serious it is usually the first crop of alfalfa that is injured. This year, although there was a large population on the first cutting, it was the second crop that was most seriously injured. In certain fields the population was large enough to deform much of the alfalfa. In many fields the population built up to a point where one had to stop sweeping after taking 50 strokes, because the net became so heavy with aphids. This was the condition up to May 10. At that time, in many fields, predators and a fungus disease began to get the upper hand. In the survey made on May 19 hardly an aphid was encountered.

#### THREE-CORNERED ALFALFA HOPPER (Stictoccephala festina Say)

Louisiana. L. O. Ellisor (May): First-generation nymphs of the three-cornered alfalfa hopper are damaging alfalfa in the southern part of the State.

ALFALFA WEEVIL (Hypera postica Gyll.)

Utah. C. J. Sorenson (May 19): This pest is doing serious injury in some fields in Utah County, in northern Utah.

G. F. Knowlton (May 23): Larvae are beginning to injure alfalfa at Kanosh, in Millard County, and are damaging alfalfa foliage in one field at Minersville, in Beaver County, both in western Utah.

Nevada. G. G. Schweis (May 13): A survey of fields in Douglas County, in western Nevada, on May 13 showed no larvae of the alfalfa weevil present, although the stems contained many eggs. This is unusual, as ordinarily by May 15 the larvae are very numerous on the plants.

California. A. E. Michelbacher (May 20): The alfalfa weevil is becoming rather scarce over the entire infested region of low land in central California. A survey of the infested area shows an average number of individuals collected per 100 sweeps of an insect net in the different fields according to the following range: San Joaquin Valley, adults 0-184, larvae 0-120; Pleasanton area, adults 0-1, larvae 0-12; San Francisco Bay area, adults 0-3, larvae 4-55. Most of the large alfalfa weevil larvae collected were parasitized by Bathyplectes. Based on rearing records, the amount of parasitization over the entire infested area for different fields on May 2 ranged from 95 to nearly 100 percent.

ALFALFA CATERPILLAR (Eurymus eurytheme Bdv.)

Tennessee. G. M. Bentley (May 24): Reported as found on alfalfa in the northern portion of Lake County, in northwestern Tennessee, where it had completely stripped the alfalfa of its leaves.

CLOVER

CLOVER LEAF WEEVIL (Hypera punctata F.)

Maryland. E. N. Cory (April 29-May 6): There is a general infestation, but reports of extreme damage coming from Cecil, Harford, (northeastern counties) and Howard County, in the central part of the State.

Virginia. P. F. Skofield (May 11): Beetles received from Hampton Institute, in southeastern Virginia.

Mississippi. C. Lyle (May 24): Adults were received from Mayersville, in Issaquena County, on April 23, with the report that they were abundant around a few alfalfa plants. Other specimens also probably found on alfalfa were received from Schlater in Leflore County on May 3, both counties being in western Mississippi.

Kansas. H. R. Bryson (May 28): Reported as abundant in a lawn at La-Crosse, in central Kansas, on May 21, but not doing damage when observed.

CLOVER ROOT BORER (Hylastinus obscurus Marsh.)

Idaho. J. R. Douglass (May 10): A complaint has been received of this insect infesting clover plants northeast of Jerome, in south-central Idaho.

COWPEAS AND SOYBEANS

CURCULIOS (Chalcodermus spp.)

South Carolina. J. G. Watts (April and May): Scattering specimens of C. aeneus Boh. have been found on cotton and cowpeas at Blackville, in southwestern South Carolina. No indications of destructive numbers.

Georgia. T. L. Bissell (May 19): Adults of C. collaris Horn are infesting potted cowpeas set in the field at Experiment, in central Georgia. First insects seen April 26, a week earlier than noted in 1936 or 1937.

CLOVER STEM BORER (Languria mozardi Latr.)

Louisiana. L. O. Ellisor (May): From 25 to 35 percent of early planted soybeans at Baton Rouge, in south-central Louisiana, contain larvae.

GRASS

MEADOW PLANT BUG (Miris dolobratus L.)

Kentucky. W. A. Price (May 28): This pest appeared in unusual numbers in bluegrass fields in Fayette, Clark, and Bourbon Counties, in central Kentucky.

A PYRALID (Nomophilia sp.)

Kansas. H. R. Bryson (May 28): This small grass worm was reported on April 26 as having destroyed 40 acres of fine bluegrass and wild-oat pastures at Williamsburg, in east-central Kansas.

SUGARCANE

SUGARCANE BORER (Diatraea saccharalis F.)

Louisiana. J. W. Ingram, W. E. Haley, and L. J. Charpentier (May 25): Injury from first-generation borers has been heavier than in a number of years. Borers of this generation are pupating and some moths have emerged.

B. A. Osterberger (May 23): Infestations are scattered. Very heavy in February-planted corn in some fields. Parasites (Trichogramma spp.) very scarce. Second-generation adults began emerging about the middle of May. Eggs are scarce.

SUGARCANE BEETLE (Euctheola rugiceps Lec.)

North Carolina. C. S. Brimley (May 31): Boring into bottoms of stalks on a farm at Sherill's Ford, in the western part of the State.

Kentucky. W. A. Price (May 28): Rough-headed cornstalk beetles did some damage to corn in the vicinity of Morgantown, in northwestern Kentucky.

Mississippi. C. Lyle (May 24): Injury to young corn and sugarcane by this insect has been reported from localities scattered over the State.

Louisiana. W. A. Douglas (May 19): Injury to young rice stalks averaged 2.8 percent for the 1938 season. A total of 8,500 stalks were examined in 17 fields and the highest percentage of injury in any 1 field was 39.6.

B. A. Osterberger (May): These insects are not so active as they were several weeks ago. Much cane has apparently overcome noticeable signs of injury. Eggs and young stages are found by digging in the soil. Few adults are attracted to lights around Baton Rouge.



FRUIT INSECTS

FLATHEADED APPLE TREE BORER (Chrysobothris femorata Oliv.)

- Massachusetts. E. P. Felt (May 24): A flatheaded borer (probably C. femorata) was found to be somewhat prevalent in beech at Hopkinton, in eastern Massachusetts.
- Indiana. J. J. Davis (May 23): Flatheaded borer reported attacking apple and maples, both hard and red, from all sections of the State.
- Illinois. W. P. Flint (May 23): Reports of damage have been generally very numerous. Damage to fruit and shade trees has been heavy.
- Kansas. H. B. Hungerford (May 23): Borers, both roundheaded (Saperda candida F.) and flatheaded, continue to be unusually abundant, and many shade trees, damaged by heat, drought, and previous defoliation by cankerworms, are dying from attack by the borers.
- Nebraska. M. H. Swenk (May 20): Complaints of damage by the flatheaded apple tree borer were received during the period April 22 to May 7 from Douglas, Merrick, and Antelope Counties, in eastern Nebraska, and from Dundy County, in southwestern Nebraska. Trees concerned were chiefly American elm, green ash, and soft maple.
- Oklahoma. F. A. Fenton (May 20): The roundheaded apple tree borer was reported on apple trees at Red Oak, in southeastern Oklahoma.

FRUIT TREE LEAF ROLLER (Cacoecia argyrospila Walk.)

- Missouri. L. Haseman (May 23): During May the heaviest outbreak in 30 years developed. Worms began pupating the middle of the month and moths have been emerging in the laboratory at Columbia since May 20. Most of the larvae have pupated, though here and there, larvae still only half-grown may be found. This year they have been attacking the foliage of a very wide range of trees and shrubs, with an occasional specimen found on herbaceous plants.

THRIPS (Thysanoptera)

- Indiana. J. J. Davis (May 23): Thrips (immature forms seen, apparently Thrips tabaci Lind.) were common on sweet cherry leaves at Kendallville, in north-eastern Indiana, on May 16. They were feeding chiefly at the base of the crotch of the main veins along the midvein. The feeding had killed little areas, which turned brown and dropped out; however, the injury was not considered serious.
- Pennsylvania. H. E. Hodgkiss (May 25): Thrips on apple leaves are generally abundant and some are apparently curling tender foliage.

EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

- Massachusetts. A. I. Bourne (May 24): Red mite followed very closely the bud development and appeared at the usual time in relation to bud development

and leaf growth of apples, although this was considerably earlier than the normal calendar date of their appearance.

Connecticut. P. Garman (May 20): Pest appearing in considerable numbers in several large apple orchards throughout the State.

Oregon. D. C. Mote (May): European red mites heavier than usual on prunes.

#### APPLE

##### CODLING MOTH (Carpocapsa pomonella L.)

New York. D. W. Hamilton (May 25): Adults were first captured at Poughkeepsie in bait traps on May 17. Weather conditions were generally unfavorable for activity and few female moths were captured before May 21. Moths began emerging from pupae in overwintering cages on May 18.

N. Y. State Coll. Agr. News Letter (May): Moth emergence was first noted at Geneva on May 18.

Pennsylvania. H. E. Hodgkiss (May 25): First catches of adults in bait pails in the following counties in southeastern Pennsylvania: Cumberland, on May 3; Adams, on May 4; Delaware, on May 6; and Franklin, on May 9. Emergence was slow, owing to low temperatures until May 17 in Delaware County. In Adams County there was a heavy catch on May 17, 18, and 19.

Delaware. L. A. Stearns (May 26): Approximately 100 percent of the overwintered larvae had pupated on May 12; the peak of emergence of spring-brood moths was on May 7 and 8; maximum catch by bait cans was on May 17; and first injury by first-brood larvae was observed on May 17, about 2 weeks earlier than usual.

Maryland. E. N. Cory (May 8): First peak of emergence, following a week of high temperatures in Washington County, in western Maryland.

Virginia. W. J. Schoene (May 23): The peak of codling moth emergence was noted on May 2 to 6 at Stuart, and on May 4 to 9 at Roanoke, both in southwestern Virginia.

A. M. Woodside (May 15): Moth emergence began at Staunton in west-central Virginia, on April 29. An apparent peak in emergence was reached on May 6 and 7, after which cool weather checked emergence. The number of moths emerging has increased rapidly and is now at an apparently true maximum. Eggs began to hatch on May 15. Oviposition light.

Georgia. C. H. Alden (May 20): First-brood larvae are beginning to leave the fruit at Cornelia, in northeastern Georgia, but only about 2 percent of the apples are stung or wormy. A few spring-brood moths are still coming to the bait pots.

Ohio. T. H. Parks (May 23): Mortality of larvae was very light during the last winter. Emergence of moths began in southern Ohio on April 27,

at Columbus on May 3, at Wooster on May 4, and near Toledo on May 16. Eggs are now common on apples at Columbus, but no larval entrances have been observed. Heavy frosts on May 12 and 13, with temperatures as low as 23° F. in a few orchards, slowed up incubation but it remains to be seen whether eggs were killed.

Indiana. L. F. Steiner (May 11): Emergence and bait-trap captures have fallen off somewhat during the last week, but the moth population in unbaited trees was about 10 percent greater than a week ago, the average at Bicknell being 15 moths. The first hatched eggs were found on May 6, 2 weeks earlier than normal. (May 19): From May 10 to 17 development had been practically at a standstill so that conditions now are only about 1 week ahead of normal. (May 24): Moth activity in southwestern Indiana reached a peak on May 3 and another of about equal size on May 19 and 20. Successful entrances in unsprayed orchards are difficult to find. Counts on May 18 showed that 92 percent of the overwintering brood had pupated and 85 percent emerged.

Illinois. W. P. Flint (May 23): Emergence from overwintering larvae has been unusually heavy, owing to the high rate of survival. As cool, wet weather has delayed or prevented egg laying, infestation in unsprayed orchards at the present time is light.

Missouri. L. Haseman (May 23): Moths began to emerge 10 to 14 days earlier than normal. In southern Missouri bait traps showed moths on the wing late in April, the emergence in that part of the State increasing in abundance until around May 3 or 4. In northwestern Missouri emergence began around May 3, increasing in abundance through May 10 and 11. In northeastern Missouri emergence in breeding cages began late in April but only an occasional moth appeared in the bait jars until May 15 and 16. In southern Missouri worms first began entering fruit about the middle of May and a week later they were observed in central and northern Missouri. While there was a considerable carry-over of the pest from last year, they have found the weather in May very unfavorable for normal breeding.

Missouri and Kansas. H. Baker (May 21): Moths began emerging in northeastern Kansas and northwestern Missouri in outdoor cages on April 29 and were first taken in bait traps on April 30. This is the earliest record of emergence for several years. Almost continuous cool, rainy weather since the first emergence has retarded development although moths have been captured in bait traps in large numbers whenever conditions have been at all favorable for their activity. No signs of larval activity have been observed by the writer, but on May 18 another observer in central Missouri found entrances, some of which appeared to be 2 or 3 days old.

Kansas. H. R. Bryson (May 28): Emergence of adults did not take place until the middle of May. The last week in May many worm entrances have occurred where control measures have not been properly taken.



Colorado. G. M. List (May 28): The first codling moth of the season emerged on May 4 at Fort Collins, in north-central Colorado. There has been very low winter mortality in this section.

J. H. Newton (May 23): The first moth was caught at Paonia, in west-central Colorado, on May 14.

Idaho. R. W. Haegele (May): Codling moth control this season promises to be more difficult than usual, owing to the survival of large numbers of worms after a mild winter and also to a light crop.

Washington. E. J. Newcomer (May 19): The first moth was found in baits at Yakima, in south-central Washington, on April 25, and the first eggs were laid in field cages on April 30.

EASTERN TENT CATERPILLAR (Malacosoma americana F.)

Maine. H. B. Peirson (May 12 and 15): First nests appeared at Bar Harbor on May 12. By May 15 the pest was very abundant in Augusta and vicinity.

F. H. Lathrop (May 17): An egg mass was observed hatching at Orono in Penobscot County, in central Maine, on April 20. Small, newly formed nests were observed on apple trees at Monmouth, in Kennebec County, in the southwestern part of the State, on April 25. The nests appear to be somewhat more abundant than last year.

Vermont. H. L. Bailey (May 28): Infestation of the eastern tent caterpillar is somewhat spotty, but heavy in many parts of the State. The feeding period is nearly ended, and the larvae are leaving trees to spin cocoons.

Connecticut. W. E. Britton (May 21): Scarce around New Haven, but more prevalent in Litchfield County, in northwestern Connecticut. More nests reported in Tolland County, to the east, than elsewhere. Nests reported very abundant at Rainbow in Hartford County, in the northern part of the State.

New York. J. V. Schaffner, Jr. (May 23): Caterpillars are causing considerable concern in Broome and Delaware Counties, in south-central New York. The wild cherry and apple trees along fences and rural highways are heavily infested.

Maryland. E. N. Cory and staff (May 24): Heavy infestation on apple, cherry, and other trees in Dorchester and Somerset Counties on the Eastern Shore.

Georgia. T. L. Bissell (May 9): First moths caught in light trap at Experiment, in central Georgia, on April 30.

GREEN FRUITWORM (Graptolitha antennata Walk.)

New York. N. Y. State Coll. Agr. News Letter (May): The green fruitworm is injuring apple to some extent in the Hudson River Valley.



Indiana. L. F. Steiner (May 24): This pest has been more abundant at Vincennes than at any time in the last 5 years, and its damage is conspicuous in some orchards.

PISTOL CASEBEARER (Coleophora malivorella Riley)

Maine. F. H. Lathrop (May 17): Small casebearers, recently emerged from hibernation, were observed attacking developing apple buds on May 3 at Monmouth, in Kennebec County.

Pennsylvania. H. E. Hodgkiss (May 25): Damage very severe in two apple orchards in Adams County, in southern Pennsylvania.

Virginia. W. J. Schoene (May 23): Reports from Winchester, in northern Virginia, that the pistol casebearer is more abundant than for several years.

APHIDS (Aphididae)

Maine. F. H. Lathrop (May 17): Newly hatched nymphs of the apple aphid (Aphis pomi Deg.) were found on apple buds on April 25 at Monmouth, in Kennebec County. This is about 1 week ahead of hatching last year. Stem mothers began producing young on May 15, only a day or two earlier than last year.

Massachusetts. A. I. Bourne (May 24): Winged migrants of the apple grain aphid (Rhopalosiphum prunifoliae Fitch) being found at present, the first of these noted before May 13.

Connecticut. P. Garman (May 20): Rosy aphids (Anuraphis rosaeus Baker) present in most apple orchards in New Haven County, becoming abundant in a few. Early season dry periods have not permitted extensive development in most orchards.

New York. N. Y. State Coll. Agr. News Letter (May): The fruit aphids are causing only a moderate amount of damage generally over the State.

Pennsylvania. H. E. Hodgkiss (May 25): Rosy apple aphids are abundant in some orchards, curling leaves and infesting fruit clusters.

New Jersey. T. L. Gayton (June 1): Very numerous on unsprayed host trees near Bound Brook, in north-central New Jersey.

Delaware. L. A. Stearns (May 16): General infestation of the rosy apple aphid, which is severe, especially in orchards where control measures have been omitted.

Maryland. E. N. Cory (May 13): Two lots of rosy apple aphids sent in, one from Cambridge and one from Baltimore, both accompanied by numbers of larvae of the ladybird beetle and the syrphus fly. Woolly aphids (Eriosoma lanigerum Hausm.) reported generally on apples.

Virginia. A. M. Woodside (May 21): Two weeks ago predators of the rosy apple aphid seemed to have the situation well in hand, but most of these have pupated and the aphids are multiplying rapidly. Damage in some orchards will be from light to moderate.

H. G. Walker and L. D. Anderson (May 25): Aphids were very abundant during the latter part of April and the first part of May on a few apple trees growing on the grounds of the Virginia Truck Experiment Station at Norfolk.

Georgia. C. H. Alden (May 20): Green apple aphids are abundant in most apple orchards in the State.

Mississippi. C. Lyle (May 24): Injury to oats by the apple grain aphid was reported on May 7 from Glendora, in Tallahatchie County, in northwestern Mississippi.

Indiana. J. J. Davis. (May 23): The rosy apple aphid has been very abundant on and destructive to apple, especially in the southern half of the State. The natural enemies are just now beginning to make some headway against them.

L. F. Steiner (May 9): Rosy apple aphids are conspicuous on many trees. Migration and natural enemies have greatly depleted the aphid population on apple trees. (May 11): Rosy and green aphids are still very abundant in western Indiana, with the former predominant and still causing severe injury. The effect on the fruit is already very noticeable. Natural enemies are increasing very slowly. The woolly apple aphid has been very active on twigs injured by the 13-year locust last season. (May 24): The damage done by rosy apple aphids is the most severe that has been observed in southwestern Indiana for several years.

Missouri. L. Haseman (May 23): During May orchards have been more severely infested by the rosy apple aphid than for many years. At Columbia the peak of development of the pest came around May 10 to 15, but they are still abundant. Notwithstanding the cool, rainy weather, predators and, to a less extent, parasites have been helping to reduce the infestation.

Washington. E. J. Newcomer (May 6): The green apple aphids are more numerous than usual at Yakima. Ladybird beetles, mostly Coccinella quinque-notata Kby., are also very numerous and 18 egg clusters were observed on 1 limb.

#### WHITE APPLE LEAFHOPPER (Typhlocyba pomaria McAtee)

Connecticut. P. Garman (May 20): Either late in appearing or less abundant than usual in New Haven County.

New York. N. Y. State Coll. Agr. News Letter (May): The first nymph was observed in the lower Hudson River Valley on April 29. The first week in May the insect was hatching generally from overwintered eggs and by May 9 the larger nymphs were beginning to acquire wings.

Pennsylvania. H. E. Hodgkiss (May 25): White apple leafhopper hatching rapidly. During the week of May 15, these were plentiful up to and including 3d-instar individuals.

Virginia. A. M. Woodside (May 21): Nymphs are common in some orchards around Staunton and adults are beginning to appear.

NEW YORK WEEVIL (*Ithycerus noveboracensis* Forst.)

Massachusetts. A. I. Bourne (May 24): A rather severe infestation was reported within the last few days. The insect has shown itself to be very abundant and is causing considerable damage in a young apple orchard adjoining a strip of woodland. Injury caused by this beetle last year was not extensive. This year, however, the insects are very abundant and have already caused considerable damage to young growth. This is interesting, as this insect is seldom abundant enough to cause appreciable damage.

PEACH

PLUM CURCULIO (*Conotrachelus nenuphar* Hbst.)

Maine. F. H. Lathrop (May 17): A very few individuals have emerged in experimental emergence cages. A period of cold rains during the last 2 weeks has delayed emergence around Monmouth, in Kennebec County.

Massachusetts. A. I. Bourne (May 24): Plum curculio has been considerably delayed in coming out of hibernation and appearing in the orchards because of the slightly cool weather this last week or 10 days.

Connecticut. P. Garman (May 20): No damage yet seen from this insect in New Haven County. Stage of tree development appears to be much further advanced than that of the insect.

New York. N. Y. State Coll. Agr. News Letter (May): Plum curculios began emerging in the lower Hudson River Valley during the first week in May and by the middle of the month were reported as abundant in several orchards.

Pennsylvania. H. E. Hodgkiss (May 25): Unsprayed peach orchards show approximately 75 percent of the fruits cut by plum curculio. Adults are plentiful, feeding and laying eggs. No hatching of eggs observed.

Delaware. L. A. Stearns (May 26): Peak of activity of overwintered adults as determined by jarring in Sussex County, in southern Delaware, on May 12. Peach drops now generally infested with mature, first-brood grubs. Partial second brood seems certain if the present favorable weather conditions continue.

Virginia. W. J. Schoone (May 23): Plum curculio adults are still depositing large numbers of eggs in the peach orchards in Albemarle County, in north-central Virginia, and many of the larvae are leaving the fruit.



A. M. Woodside (May 21): Overwintered adults of the plum curculio were more abundant in peach orchards of the Crozet section, in Albemarle County, this spring than since 1930. Larvae began to leave dropped fruit on May 7. Most infested fruits in orchards that were sprayed and jarred had dropped by May 15. Adults in the insectary are still depositing large numbers of eggs.

Georgia. O. I. Snapp (May 14): At Fort Valley, in central Georgia, 3,375 larvae were reared from 1 bushel of peach drops collected on April 13. This represents an infestation of about 42 percent, which is the maximum infestation. The average infestation will be considerably lighter than this. (May 20): The first plum curculio pupation of the season was recorded at Fort Valley on May 6, which is exactly 3 weeks earlier than the first pupation last year. Pupae of the first generation had transformed to adults in the soil by May 20, but there had been no emergence of new beetles by that date. Cage and jarring records revealed the fact that most of the overwintered adults had died by May 18. The curculio infestation at Fort Valley is now lighter than that of an average year, which is doubtless due to the lighter than usual carry-over from last year, perhaps the lightest in 18 years.

C. H. Alden (May 20): The grub infestation was so light in the northern section of the State that many of the growers did not pick up drops. The peaches in the orchards to date remain practically free of worms.

Mississippi. C. Lyle (May 24): Considerable injury on unsprayed peach trees is reported by J. Milton, of Jackson; M. L. Grimes, of Meridian; and N. D. Peets of Brookhaven, in the eastern and southern parts of the State.

Louisiana. W. F. Turner (May 16): Curculios were found to be present in considerable numbers in Bossier Parish, in northwestern Louisiana, on May 10, when jarring was tried.

Arkansas. W. F. Turner (May 16): Discussion with various growers in the Nashville area, which includes parts of Howard and Pike Counties, in southwestern Arkansas, brought out the fact that in some orchards there is a much heavier infestation than has occurred in the area since 1929. Orchards that have received uniformly efficient control measures during the last several years are very lightly infested and the infestations are confined to the areas near possible hibernation quarters.

#### ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Delaware. L. A. Stearns (May 26): Approximately 100 percent of overwintered larvae pupated by April 25; peak of emergence of spring-brood moths on April 20 and 21; first twig injury by first-brood larvae observed on May 4 and at its height by May 20.

Virginia. A. M. Woodside (May 21): Emergence of the spring brood of oriental fruit moths is complete in the Staunton district. Twig infestation is high, although premature hardening of twigs has caused many of the worms to enter fruit. No first-brood moths have been observed.



Georgia. O. I. Snapp (May 14): Moths of the first full generation of 1938 at Fort Valley are now emerging. The infestation is light, or about as usual at this season of the year.

C. H. Alden (May 20): More abundant than last year near Cornelia and several orchards, especially where there are plantings of young trees, are showing considerable twig injury.

Tennessee. G. M. Bentley (May 24): Oriental fruit moth reported infesting peaches very heavily at McMinnville, in Warren County, in central Tennessee.

Mississippi. C. Lyle (May 24): Peach twigs injured by the oriental fruit moth were received from Hazlehurst, in Covich County, in southwestern Mississippi, on May 16.

Indiana. L. F. Steiner (May 19): Twig damage is less than normal at this stage of development in southwestern Indiana.

Illinois. W. P. Flint (May 23): This insect has appeared in rather large numbers in many localities in southern Illinois. The second brood is just coming on.

PEACH TWIG BORER (Anarsia lineatella Zell.)

Colorado. J. H. Newton (May 10): Overwintering brood of larvae nearly mature and causing injury to new growth and fruit in apricot orchard near Paonia in the west-central part of the State.

PEACH BORER (Conopia exitiosa Say)

Connecticut. P. Garman (May 20): Severe infestations seen in several peach orchards in New Haven County, causing more damage than usual.

Virginia. A. M. Woodside (May 21): Peach borers seem to be unusually abundant in the Staunton district.

Georgia. O. I. Snapp (May 19): Peach orchards in the vicinity of Fort Valley have been examined for cocoons, but there has been no cocooning or pupation to date. The first cocoon of the season last year was found on May 28. In 1936 moths were emerging by May 8.

Mississippi. J. Milton (May 24): Injury to peach trees in Hinds County, in southwestern Mississippi, was reported on May 23.

BLACK PEACH APHID (Anuraphis persicae-niger Smith)

Delaware. L. A. Stearns (May 26): Abundant over the entire State on peaches and observed on grapes at Farmington, in Kent County, on May 24.

Virginia. A. M. Woodside (May 21): Infestation has been severe, particularly on young trees, in the Staunton district. In a few orchards the infestation on mature trees has been so severe that it was necessary to apply a spray for control.

Washington. E. J. Newcomer (May 25): Reported from Yakima on young peach trees, just set out. Apparently numerous enough to prevent trees from growing.

#### PEAR

##### PEAR PSYLLA (Psyllia pyricola Foerst.)

Connecticut. P. Garman (May 20): Reported from New Haven County on pear. Rather less abundant than usual at the beginning of the season.

New York. N. Y. State Coll. Agr. News Letter (May): In the lower Hudson River Valley all stages of the nymphs were common by the middle of the month. By the last of the month most of the eggs had hatched in western New York and a large percentage of the nymphs were in the hardshell stage.

##### PEAR BORER (Conopia pyri Harr.)

Virginia. A. M. Woodside (May 21): Adults of the pear borer are appearing generally in considerable numbers in bait pails in apple orchards in the Staunton district.

##### PEAR THRIPS (Taeniothrips inconsequens Uzel)

Oregon. D. C. Mote (May): Injury reported as serious in some Willamette Valley orchards. Emergence on March 9, oviposition on April 6, and hatching about April 15 in Umpqua Valley. Hatching on April 20 in Willamette Valley. Not numerous in Umpqua Valley and abundance spotted in Willamette Valley.

#### CHERRY

##### CHERRY LEAF MINER (Profenusa collaris MacG.)

Pennsylvania. E. P. Felt (May 24): Reported as somewhat abundant in the Philadelphia area.

Maryland. E. P. Felt (May 24): Reported as somewhat abundant in the Centerville area, on the Eastern Shore.

##### BLACK CHERRY APHID (Myzus cerasi F.)

New Jersey. T. L. Guyton (June 1): Reported attacking cultivated cherry at Bound Brook, in north-central New Jersey.

Utah. G. F. Knowlton (May 11): Beginning to curl cherry foliage in parts of Davis County, in northern Utah.

RASPBERRY

RED-NECKED CANE BORER (Agrilus ruficollis F.)

Virginia. C. R. Willey (April 25): In an infestation at Richmond about two-thirds of the canes were affected and at least half were either dead or badly wilted. An extremely hot spell for 2 days caused the canes to go down rather rapidly. About 80 percent of the larvae had pupated and were located 5 to 6 inches above the gall in the cane. This was the worst case of this pest I have seen.

RASPBERRY FRUITWORM (Byturus unicolor Say)

New York. N. Y. State Coll. Agr. News Letter (May): This insect is abundant in raspberry plantings in the lower Hudson River Valley.

Washington. W. W. Baker and B. J. Landis (May 17): Reported attacking raspberry, loganberry, and bush blackberry at Puyallup Valley, in western Washington. First eggs observed on May 12. Adults found feeding on Rubus spectabilis (salmon-berry) in greater numbers than usual.

RASPBERRY SAWFLY (Monophadnoides rubi Harr.)

New York. N. Y. State Coll. Agr. News Letter (May 23): Larvae are very abundant on the undersides of the young raspberry leaves and are doing much damage in Nassau County.

Kansas. H. R. Bryson (May 28): It was reported on May 25 that the raspberry sawfly had been causing considerable damage in Doniphan County, in northeastern Kansas.

BLACKBERRY

AN APHID (Macrosiphum rubicellum harpagorubus Knlt.)

Washington. B. J. Landis and W. W. Baker (May 17): Reported on evergreen blackberry from Puyallup. A few alate individuals among the apterous ones. An adult elaterid and several adults of Adalia bipunctata (L.) observed feeding on these aphids.

A SCALE INSECT (Locanium coryli L.)

Washington. W. W. Baker and C. W. Getzendaner (May 18): Reported on cultivated Rubus and other plants at Puyallup. Continues to be abundant. First males observed on April 1.

GOOSEBERRY

A BORER (Xylocrius agassizi Lec.)

Washington. W. W. Baker (April 27): First record of commercial damage to gooseberries in Washington reported from Buckley, in Pierce County, western Washington.

GRAPE

GRAPE LEATHOPPER (Erythroneura comes Say)

Michigan. R. Hutson (May 26): Grape leafhoppers are very numerous in raspberry plantings.

California. G. H. Kaloostian (May 18): Reported from Fowler, in southern California, in increasing abundance and as worse than last year.

PACIFIC MITE (Tetranychus pacificus McG.)

California. L. M. Smith (May 19): The Pacific mite emerged from hibernation under the bark of grapevines in San Joaquin County in large numbers late in March and early in April. In some vineyards from 10 to 15 overwintered females per leaf could be found in the early part of April, but, owing to an unusual abundance of predators, particularly mites and predaceous thrips, the population of mites has been reduced until, at the present time, none of them can be found in most vineyards where large numbers were known to have survived the winter.

A MITE (Tetranychus willamettei McG.)

California. L. M. Smith (May 18): The Willamette mite has been taken in several vineyards near Lodi and Escalon. At present severe injury can be found on the basal three or four leaves on some canes, whereas the terminal six or eight leaves show no injury nor infestation. Observations during the last 2 weeks indicate that the population is decreasing somewhat.

PECAN

A MOTH (Tortricidae)

Louisiana. L. O. Ellisor (May): The larvae of a tortricid, similar in habits and appearance to the oak ugly nest tortricid (Cacoecia cerasivorana Fitch), defoliated many pecan trees in the town of Opelousas, in south-central Louisiana, during the latter half of May. This insect first attracted attention as a pest of pecan in Opelousas 3 years ago on a limited number of trees, but since that time the infested area has increased each year, and this year included pecan trees throughout the town.

PECAN NUT CASEBEARER (Acrobasis caryae Grote)

Georgia. G. F. Moznotte (May): On May 16 noticed the first cluster of pecan nuts infested at Albany. From May 16-21 larvae were noticed in greater abundance. In some orchards the insect is practically absent, judging from infested clusters, while in other orchards as high as 25 percent of the clusters are infested. As a whole, the infestation was much less than 25 percent of infested clusters up to May 21.



CIGAR CASEBEARER (Colcophora fletcherella Vern.)

Florida. J. R. Watson (May 23): In Okaloosa and Walton Counties the cigar casebearer has been very injurious to pecan, eating out the young, unfolding buds. This insect has been more or less abundant wherever pecans are grown in Florida, but in western Florida the injury was particularly severe.

HICKORY SHUCK WORM (Laspeyresia caryana Fitch)

Georgia. G. F. Moynette (May): On May 18 the first moths of the first generation were bred from phylloxera galls on seedling pecan trees at Albany. Although eggs were found on the foliage of budded pecan trees in orchards, no infested pecan nuts had been observed by May 23. In several pecan nurseries about Albany phylloxera galls on seedling pecan trees are heavily infested.

PECAN BUDMOTH (Gretchena bolliana Sling.)

Mississippi. G. L. Bond (May 18): Several reports of heavy damage by pecan budmoth to trees in southeastern Mississippi that have been topworked have been received.

PECAN PHYLLOXERA (Phylloxera devastatrix Perg.)

Mississippi. C. Lyle (May 24): Specimens accompanied by reports of rather heavy general infestations on pecan trees have been received recently from the Delta district.

Louisiana. C. O. Eddy (May): Abundant throughout the State.

CITRUS

GREEN CITRUS APHID (Aphis spiraeicola Patch)

Florida. H. T. Fernald (May 23): Earlier in the year this pest was not important in the Orlando district but a very long drought (nearly 3 months now with almost no rain) has given it an opportunity to increase greatly and do much damage to young growth.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Mississippi. C. Lyle (May 24): Heavy infestations of this insect on Cape-jasmine were reported from Yazoo and Yalobusha Counties, in northern Mississippi, recently. A light infestation on Japanese persimmon was also reported from Harrison County, in the southern part of the State.

CITRUS MEALYBUG (Pseudococcus citri Risso)

Florida. J. R. Watson (May 23): These insects have made their appearance on grapefruit in about the usual numbers for this time of year.

ITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida. J. R. Watson (May 23): Owing to the warm and dry weather rust mites have been generally abundant the past month.

COCONUT

DESTRUCTOR SCALE (Aspidiotus destructor Sign.)

Florida. H. Spencer (May 18): This insect is not so numerous in the Miami and West Palm Beach districts as it was last fall. A very large number of empty cases of Chilocorus cacti L. indicated that the coccinellid was a factor of importance in control.

PAPAYA

PAPAYA FRUITFLY (Toxotrypana curvicauda Gerst.)

Florida. H. Spencer (May 18): During April and May this fly appeared and did some damage to maturing fruits on last year's plants in the Miami district.

PAPAYA WHITEFLY (Trialeurodes variabilis Quaint.)

Florida. H. Spencer (May 23): Adults of the papaya whitefly appeared in the vicinity of Orlando about May 14.

T R U C K - C R O P I N S E C T S

VEGETABLE WEEVIL (Listroderes obliquus Klug)

Georgia. T. L. Bissell (May 16): Vegetable weevil attacking newly set tomato plants at Experiment in the central part of the State. (May 23): Accompanying the vegetable weevil on tomato were a number of Listroderes apicalis Wtrh. adults. On some days all of these were apparently dead as most of them had lost their legs. Heretofore, I had collected one specimen of this insect at Experiment on February 13, 1936.

Mississippi. C. Lyle (May 24): Considerable damage being done by this insect on garden and truck crops and it was reported as very numerous during May in many localities in the State.

California. J. C. Elmore (May 10): Reported attacking young tomato plants in the field at Santa Ana, Orange County.

R. E. Campbell (May 18): Vegetable weevil adults are reported to be causing considerable damage to potato foliage at Temecula, in southwestern Riverside County.

FLEA BEETLES (Halticinae)

- New York. N. Y. State Coll. Agr. News Letter (May 9): Flea beetles reported from Nassau County on May 2, on tomato plants recently set out. The leaves showed considerable evidence of their feeding.
- Pennsylvania. H. E. Hodgkiss (May 25): Field corn in York County, in southeastern Pennsylvania, is reported to be seriously injured by this pest.
- Virginia. A. M. Woodside (May 21): Flea beetles are damaging beans in gardens in the Staunton district.
- Kentucky. W. A. Price (May 28): The striped flea beetle (Phyllotreta vittata F.) is very common in gardens in central Kentucky.
- Mississippi. C. Lyle (May 24): Flea beetles, Systema elongata F., were received from a correspondent at Picayune, in Pearl River County, in southern Mississippi, on May 19, with a report that a light infestation was present on cotton. N. L. Douglass reported on May 21 that flea beetles were numerous in sweetpotato plant beds.
- Tennessee. G. M. Bentley (May 24): Reported on May 14 from Memphis, Shelby County, in southwestern Tennessee, on sweetpotatoes.
- North Dakota. J. A. Munro (May): Flea beetles very abundant and causing serious damage, particularly to radishes in the vicinity of Fargo, in southeastern North Dakota.
- Kansas. H. B. Hungerford (May 23): The spinach flea beetle (Oedionychis gibbittarsa Say) has been very destructive. The striped flea beetle on radish has also done considerable damage.
- Idaho. J. R. Douglass (May 5): Complaints of flea beetle injury to radishes have been received from Jerome and Twin Falls Counties, in south-central Idaho.
- Utah. G. F. Knowlton (May 27): Flea beetles are damaging recently set out tomato plants in several parts of Utah County, in north-central Utah.
- Nevada. G. G. Schweis (May 9): Flea beetles were observed attacking sugar beets at Lovelock, in western Nevada, on May 9 and the damage was so severe that it necessitated the reseedling of 60 acres.
- Washington. K. E. Gibson (May 20): Flea beetles were noted on young cabbage plants near Walla Walla, in southwestern Washington, where they were eating out the hearts of the plants so as to prevent the formation of heads. They were also damaging the leaves of young turnips, which would eventually result in the death of the plants.



SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata F.)

North Carolina. C. S. Brimley (May 23): **Attacking** corn seedlings at Dockery, in the northwestern part of the State.

South Carolina. J. G. Watts (May 24): The damage by this insect to cucumbers has been locally severe around Blackville, in southwestern South Carolina, but has been less so within the last 10 days. From May 21 to 24 adults were coming to trap lights in larger numbers than at any time this season. The larvae of this insect (corn bud worm) have been doing considerable damage to corn in low-lying grounds. In certain places more than 50 percent of the stand was killed. This injury was done during the latter half of April and the first 10 days of May.

Georgia. T. L. Bissell (May 23): Spotted cucumber beetles are everywhere, feeding on beans, corn, and other crops and damaging flowers. A few come to lights; also striped cucumber beetles at lights. (May 13): Larvae of this pest are killing beans at the Station at Experiment, on land which had been in Austrian peas. Adults are feeding on young watermelons. (May 16): Larvae in soil have ruined a watermelon planting at Experiment; at least 95 percent of the plants have been killed, most of them before the leaves left the soil. The planting followed vetch. Beetles of the new generation are abundant on flowers, squash, and corn. They are moving from vetch which was not plowed.

Mississippi. C. Lyle (May 24): Reports received on May 21 of abundance on and injury to melons and truck in the eastern half of the State.

Iowa. H. E. Jaques (May 26): The spotted cucumber beetle seems to be out in more than usual abundance this year. Reported from Mount Pleasant, in southeastern Iowa.

Missouri. L. Haseman (May 23): This beetle has been much less abundant than it was at this time a year ago, but in central Missouri the pest has been on wing throughout the month.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

Oregon. D. C. Hote (May): This insect is present generally in the adult stage on hops.

California. H. Wilcox (May 10): Adults were numerous and feeding largely on the silks, some feeding on the tassels of corn, at Olive, in the southern part of the State.

CARROT BEETLE (Ligyrus gibbosus Deg.)

Georgia. T. L. Bissell (May 23): The carrot beetle has been plentiful at lights every night since April 29 at Experiment. A few were noticed daily from April 7. No injury **by this species** has been noted.



South Dakota. H. C. Severin (May 20): The carrot beetles have passed the winter successfully and are extremely abundant in eastern South Dakota. Ordinarily this insect gives us very little trouble, if any, but during the last 2 years and, especially last year, it caused much damage to many flowers, and crops, besides carrots.

Nebraska. M. H. Swenk (May 20): Adults were numerous at lights in Lancaster County, in southeastern Nebraska, during May.

Kansas. H. R. Bryson (May 28): Reported on May 19 as being abundant at Lyons, in central Kansas, in a garden.

Oklahoma. C. F. Stiles (May 25): Reported damaging carrots in Woods County, in northwestern Oklahoma.

SEED-CORN MAGGOT (Hylemyia cilicrura Rond.)

New York. N. Y. State Coll. Agr. News Letter (May 16): W. J. Clark reported from Rockland County, in southeastern New York, that a 3-acre field of beans was found to be 40-percent infested with seed-corn maggot.

Ohio. D. M. DeLong (May 27): At Circleville, in south-central Ohio, a severe infestation of maggots in petioles of spinach from a 14-acre field, grown for canning purposes, was reported. Other fields in the vicinity are also infested. Appears to be the seed-corn maggot.

Illinois. W. P. Flint (May 23): This insect has been doing some damage in the northwestern part of the State. It has not been reported from any other area.

Iowa. C. J. Drake (May 27): The seed-corn maggot is widely distributed in the southern part of the State and has done considerable damage. Wet, cool weather has been very favorable to this insect.

Nebraska. M. H. Swenk (May 10): Planted corn in Polk County, in southeastern Nebraska, was reported infested with this insect at an average of five or six maggots to the kernel.

Kansas. H. R. Bryson (May 28): Was observed on May 21 infesting seed corn in a field near Norton, in northwestern Kansas, and Elbing, in the southeastern part of the State.

LESSER CORNSTALK BORER (Elasmopalpus lignosellus Zell.)

Mississippi. C. Lyle (May): H. Gladney reported on May 21 that he had observed injury to peas and corn in Harrison County, in southern Mississippi. On the same date M. L. Grimes reported slight injury to corn in one field observed in Lauderdale County, in the east-central part of the State. Specimens of this species were sent in on May 19 from Biloxi, in Harrison County, with a statement that butter beans, snap beans, and other garden plants had been injured by them.

ZEBRA CATERPILLAR (Mamestra picta Harr.)

Nevada. G. G. Schweis (May 19): Reported as damaging gardens and fruit trees in central Nevada.

STRAWBERRY FRUITWORM (Cnephasia longana Haw.)

Oregon. D. C. Mote (May): Injury to strawberries, vetch, and flax present in some locations and abundant in some fields near Mount Angel, in northwestern Oregon. Third to fifth instars present.

GREEN PEACH APHID (Myzus persicae Sulz.)

Maryland. E. N. Cory (May 24): Did serious damage to spinach carried over winter, causing some rejections in the Baltimore market. The infestation on new spinach started to build up in Baltimore and Harford Counties, but no serious damage is evident at this time.

Colorado. J. H. Newton (May 23): First stem mothers hatched in western Colorado on March 7. Degree of infestation ranged from light to heavy.

Mississippi. C. Lyle (May 24): A rather heavy infestation of this pest in sweetpotato plants in beds was reported early in May at Purvis, in Lamar County, and at Wiggins, in Stone County, both in southern Mississippi.

SPITTLE BUGS (Cercopidae)

Delaware. L. A. Stearns (May 23): More than normally abundant on clover and alfalfa throughout the State and present on strawberries at Clayton, Kent County, in considerable numbers.

Oregon. D. C. Mote (May): Injury by a spittlebug, Philaenus leucophthalmus L., normal in the Willamette Valley, but abundant in the southern part of the valley. Third and fourth instars present. Injury by another spittlebug, Aphrophora permutata Unl., normal in the valley, with third and fourth instars present.

EUROPEAN EARWIG (Forficula auricularia L.)

Washington. E. W. Jones (May 20): The first brood of this insect has hatched and is fairly abundant in home gardens in Walla Walla. Also reported in apricot trees.

Oregon. D. C. Mote (May): The young are present generally and are above ground.

CRICKETS (Gryllidae)

Florida. H. T. Fernald (May 23): Mole crickets are frequent on higher ground now, making their shallow burrows in lawns and grasslands in the Orlando district.

Mississippi. C. Lyle (May 24): On April 27 Scapteriscus acletus R. & H. was reported in a garden and melon patch in Clark County, in eastern Mississippi.

Nebraska. M. H. Swenk (May 4): A specimen of the mole cricket Gryllotalpa hexadactyla Perty was sent in from Dakota County, in eastern Nebraska. (May 17): A complaint of the infestation of a cave by crickets (Gryllus assimilis F.) was received from Nemaha County, also in the eastern part of the State.

#### POTATO AND TOMATO

##### COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

New York. N. Y. State Coll. Agr. News Letter (May): This pest is very abundant on Long Island. The beetle was first observed on April 28. Farmers report that the insect is 3 weeks earlier than usual. Numerous egg masses were observed on May 17.

New Jersey. J. B. Schmitt (May 24): Colorado potato beetles are emerging in large numbers and causing some injury to young tomatoes and potatoes. Distributed generally.

Delaware. L. A. Stearns (May 14): Present in about average abundance in potato fields of southern Delaware.

Virginia. H. G. Walker and L. D. Anderson (May 25): The Colorado potato beetle has been very abundant and has done considerable damage in potato fields in the Norfolk vicinity where they have not been properly controlled.

Indiana. J. J. Davis (May 23): Adults were doing considerable damage to field-sown tomato plants on April 5 at Boonville, in southwestern Indiana. At Vincennes we observed adults out and laying eggs freely on tomato seedlings on April 30. Other reports indicate the adults and larvae occurring in destructive abundance in several localities of southern Indiana.

Kentucky. W. A. Price (May 28): These insects are more abundant than usual. Larvae did much damage in large plant beds of tomatoes at Owensboro, in northwestern Kentucky.

Tennessee. G. M. Bentley (May 24): Several observations made. Found feeding on Irish potato during the first 2 weeks in May in four counties in the western half of the State.

Mississippi. C. Lyle (May 24): L. J. Goodgame, of Aberdeen, and N. L. Douglass, of Grenada, both in central Mississippi, reported on May 21 that Colorado potato beetles were numerous on Irish potatoes and tomatoes in their districts.



Louisiana. B. A. Osterberger (May): Either harvesting or maturing of potato plants has caused a general movement of these insects over to tomatoes. Where control measures were not used the plants have been completely killed.

Missouri. L. Haseman (May 23): As usual, this pest began to appear with the development of early potatoes. During the middle of the month at Columbia adult beetles were taken in great numbers in gardens and old potato fields and egg laying began to show up around May 15.

Oklahoma. C. F. Stiles (May 25): The Colorado potato beetle has been reported in the eastern half of the State in unusually large numbers.

Idaho. B. F. Coon (May 31): One adult beetle found on a small volunteer potato plant 5 miles west of Buhl. **This is believed to be the first report of this insect in south-central Idaho.**

Utah. G. F. Knowlton (May 18): Adults are scarce in the small infested area of Davis and Weber Counties, in northern Utah.

POTATO FLEA BEETLE (Epitrix cucumeris Harr.)

Connecticut. N. Turner (May 21): One acre of cucumber seedlings seriously damaged. Generally prevalent on potatoes.

Pennsylvania. H. E. Hodgkiss (May 25): Adults present generally and had severely injured potato foliage.

Delaware. L. A. Stearns (May 20): Abundant generally throughout Sussex and Kent Counties on newly set tomato plants.

Virginia. L. D. Anderson and H. G. Walker (May 25): The potato flea beetle emerged from hibernation about 2 weeks earlier than usual this year and they were very abundant and injurious early in the season in the Norfolk district. However, most of the overwintering beetles have died and they are now relatively scarce in the fields.

Oregon. D. C. Mote (May): Emerging on May 15.

CORN EAR WORM (Heliothis obsoleta F.)

Georgia. T. L. Bissell (May 9): A tomato field at Tifton, in south-central Georgia, was noted with fruit well infested, a few worms nearly grown. At Experiment on May 1 the eggs which were first laid on April 26 had started hatching. Few worms on vetch. (May 23): Eggs of this insect have been found on tomato plants at Experiment today, 60 eggs on 70 plants (only 1 hatched egg) and these are about the first on tomato. First-generation worms on vetch are about mature. (May 25): This insect has started depredations on tomatoes at Clarkston, in north-western Georgia. Many first- and second-instar larvae in very small fruits and on leaves. One larva noted that was probably third instar, being half an inch long.

TOMATO PINWORM (Gnorimoschema lycopersicella Busck)

California. J. C. Elmore (May 18): The tomato pinworm is unusually abundant on early tomatoes in the San Pedro Hills area, in southern California. From 1 to 3 leaf folders per plant were found on the ocean front and from 5 to 13 per plant on the bay side of the hills. Only a trace of pinworm damage could be found in this area in May 1937.

HORNWORMS (Protoparce sp.)

Georgia. T. L. Bissell (May 23): Two small hornworms found on tomato at Experiment on this date.

Utah. G. F. Knowlton (May 23): Tomato worm injury was severe on tomatoes at Minersville, in southwestern Utah, in 1937.

California. J. Wilcox (May 16): First eggs of the year of the tomato hornworm were found on tomato plants about 1 foot in diameter. Reported from Olive, in the southern part of the State.

STALK BORER (Papaipema nobris nitela Guen.)

Missouri. L. Haseman (May 23): Since the 15th of May young stalk borers at Columbia have been on the increase, boring into the leaf stalks and into the stems of potatoes, other crops, wild plants, and weeds. Indications are that this pest is going to be rather severe.

POTATO LEAFHOPPER (Empoasca fabae Harr.)

Virginia. H. G. Walker and L. D. Anderson (May 25): These insects are very scarce in all of the potato fields examined in the Norfolk area; however, adult leafhoppers were moderately abundant and newly hatched nymphs quite numerous in a field of broad beans near Portsmouth.

TOMATO PSYLLID (Paratrioza cockerelli Sulc.)

Colorado. G. M. List (May 28): This pest was very abundant on potatoes at Fort Collins, in north-central Colorado, on May 17. This is an unusually heavy infestation for so early in the season, 10 adults and 22 eggs being counted on 1 plant.

BEANS

MEXICAN BEAN BEETLE (Epilachna varivestis Muls.)

New York. N. Y. State Coll. Agr. News Letter (May): Beetles were emerging from hibernation on Long Island about the middle of the month, although they were not observed on bean plants.

New Jersey. T. L. Guyton (June 1): Overwintering adults not especially numerous on beans at Bound Brook in north-central New Jersey.

Pennsylvania. H. E. Hodgkiss (May 25): Adults were beginning to feed on garden beans in Franklin County, in south-central Pennsylvania, on May 9.

North Carolina. W. A. Thomas (May 20): This insect has shown up earlier than usual on the beans in the Chadbourn area, in the south-central part of the State. The adults have already seriously checked the growth of spring beans where no control methods have been practiced. No larvae have been observed.

South Carolina. J. G. Watts (May): The bean beetle has been observed in larval and adult stages at Williston, Blackville, and Charleston, in the southern part of the State, during the month. The damage thus far is not severe in any of these localities.

Georgia. C. H. Alden (May 20): Moderate injury to snap beans reported from Cornelia, in northeastern Georgia.

T. L. Bissell (May 23): This pest came out early, on April 28, or before. On May 4 we received specimens from Vidalia, Toombs County, in southeastern Georgia. (June 3): Larvae feeding and becoming injurious at Experiment. Adults feeding and a few eggs found at Tifton.

Ohio. N. F. Howard (May 5): One adult of this insect was taken at Columbus on April 30. Several egg masses were found at South Point on May 5, indicating that beetles had left hibernation at least 12 days previously. This is probably the earliest record for that latitude. (May 23): Cool weather and frequent heavy rains at South Point have retarded reproduction of the beetle and have aided materially in control.

Alabama. J. M. Robinson (May 19): Has appeared at Auburn and the larvae of the first generation are in the last instar.

Mississippi. C. Lyle and assistants (May 24): Reports from the eastern half of the State indicate heavy infestations on beans.

Colorado. R. L. Wallis (May 21): Beetles have successfully passed the winter in numbers much larger than normal and are emerging from hibernation in the vicinity of Grand Junction and Grand Valley, in west-central Colorado.

#### BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Virginia. C. R. Willoy (May): Apparently more abundant this season than usual. We have had a number of complaints from near Richmond and several from out in the State. One gardener sent in several hundred stating that he had never encountered the pest before.

H. G. Walker and L. D. Anderson (May 25): Rather abundant in some bean plantings, feeding being especially noticeable in the Norfolk section during the dry weather the first part of May.



Ohio. H. C. Mason and R. H. Nelson (May): Adult beetles were very numerous at South Point, occurring in greater numbers than for several years. Estimates of leaf surface consumed on some bean patches in the most heavily infested parts of the field ran as high as 35 to 40 percent.

Tennessee. G. M. Bentley (May 24): On May 8 the lower leaves of beans were reported as having been badly eaten by this insect in many parts of the State.

Mississippi. H. Gladney (May 24): Slight injury to beans in Jackson and Harrison Counties, on the Gulf coast, reported on May 21.

#### CABBAGE

##### IMPORTED CABBAGE WORM (Pieris rapae L.)

Maine. A. E. Brower (May 14): Adults reported appearing in the vicinity of Bar Harbor.

Connecticut. N. Turner (May 21): Butterflies appeared early in May and young larvae are common. Little damage done.

Maryland. E. N. Cory (May 24): Reported as being present in Montgomery County, in western Maryland.

Virginia. H. G. Walker and L. D. Anderson (May 25): These insects have been moderately abundant and the larvae have caused considerable damage in some fields in the Norfolk area.

Georgia. T. L. Bissell (May 23): A report of cabbage worms from Spalding County, in west-central Georgia.

Ohio. N. F. Howard (May 23): Early cabbage is exceptionally clean. Adults are not very numerous and eggs and larvae are very scarce at South Point.

##### A CABBAGE BUTTERFLY (Pieris monuste L.)

Florida. H. T. Fernald (May 23): Very little evidence of any migratory flight thus far this spring, along the Indian River. On May 6 a few were seen near Cocoa, all working south as would be expected in that locality, but there was no real migratory flight.

##### CABBAGE MAGGOT (Hylemyia brassicae Bouche)

Connecticut. N. Turner (May 21): Observations show a very heavy infestation with serious damage in the western half of the State. Untreated plants are dying and improperly treated ones are moderately infested.

A. W. Morrill, Jr. (May 1 - 17): These root maggots have caused considerable trouble to local growers of cabbage and radishes in Hartford County. Numerous calls for information have been received

from growers, many of whom also grow tobacco and were apprehensive lest this pest extend to tobacco, commonly attacked in scattered fields by H. cilicrura Rond.

Pennsylvania. H. E. Hodgkiss (May 25): Adults were laying eggs abundantly but none were hatched on May 12 in the southeastern counties.

New Jersey. J. B. Schmitt (May 24): ~~Cabbage maggot~~ is showing a very light infestation as compared with the preceding 2 years and even in nontreated plantings the injury is almost negligible.

CABBAGE CURCULIO (Ceutorhynchus rapae Gyll.)

Ohio. T. H. Parks (May 20): Reported that they were causing some injury to early cabbage in the southern part of the State.

CABBAGE SHOOT WEEVIL (Ceutorhynchus assimilis Payk.)

Washington. M. J. Forsell (May 26): Reported on cabbage and turnips from the western part of the State. The threatened damage of this pest for the season of 1938 appears at present to be much smaller than that occasioned during the season of 1937.

HARLEQUIN BUG (Murgantia histrionica Hahn)

North Carolina. W. A. Thomas (May 20): The nymphs of this insect are extremely abundant on some of the cruciferous crops in the Chadbourn area, having already caused serious loss in the home gardens by killing many of the plants.

Tennessee. G. M. Bentley (May 24): On May 8 this pest was reported as infesting cabbage at Memphis, Shelby County.

SQUASH

SQUASH BUG (Anasa tristis Deg.)

Virginia. H. G. Walker and L. D. Anderson (May 25): Squash bugs are moderately abundant in some squash fields in the Norfolk district, where they are depositing a rather large number of eggs.

South Carolina. J. G. Watts (May 25): Squash bugs have been found on squash and cucumbers during most of the month in the Blackville area but no perceptible damage has been observed. Egg laying has begun.

Louisiana. L. O. Ellisor (May): Overwintering adults of the pest are mating and laying eggs at Baton Rouge.

Utah. G. F. Knowlton (May 4): Squash bugs are active and abundant in the Ogden-Merriott area of Weber County.

SQUASH BORER (Melittia satyriniformis Hbn.)

Louisiana. L. O. Ellisor (May): The squash borer is very destructive to squash at Baton Rouge.

PEAS

PEA ~~APHID~~ (Illinoia pisi Klth.)

Connecticut. N. Turner (May 21): Observations in New Haven and Fairfield Counties show no pea aphids as yet.

New York. N. Y. State Coll. Agr. News Letter (May): The pea aphid was reported on peas during the first half of the month on Long Island. On May 9 the insect was observed to be increasing rapidly at Geneva and migration from alfalfa to peas had started.

Delaware. L. A. Stearns (May 18): Infestation more severe than usual throughout southern Delaware.

Maryland. E. N. Cory (May 24): First report received on April 23. General infestation over the State, although not doing serious damage in northern Maryland along the Pennsylvania line. The infestation has been very heavy, with continuous migration from clover, and continuous breeding, notwithstanding careful spraying and dusting. The infestation on the Eastern Shore has been accompanied by mosaic, and the two will probably result in a heavy decrease in the crop.

Virginia. H. G. Walker and L. D. Anderson (May 24): Most of the early peas in Norfolk and Princess Anne Counties matured without being appreciably injured by the pea aphid. However, several late fields of peas and several fields of broad beans have been very seriously injured by this pest in these two counties. Although the pea aphid was not as destructive in Northampton and Accomac Counties as last year, it caused considerable injury where control measures were not applied. The injury was apparently more severe in the northern part of Accomac County than farther south.

Wisconsin. J. E. Dudley, Jr. (May 4): Aphids increasing rapidly in Madison and vicinity. There is evidence that a flight is in progress from the southwest, as unusually large numbers of alate forms are present. (May 20): Aphids are slowly increasing in alfalfa. Infestation is still light. Early planted Alaska peas very lightly infested.

Mississippi. J. Milton (May 24): English peas heavily infested with aphids in Madison County, in west-central Mississippi.

MELONS

SQUASH BEETLE (Epilachna borealis F.)

North Carolina. W. A. Thomas (May 19): Adults are much more numerous this season than last. Some damage is being done to young melons, which is rather unusual for the Chadbourn area, as these insects rarely show up in abundance until late in July.



CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata F.)

Connecticut. N. Turner (May 23): A few beetles were seen on May 21 and were numerous on May 23.

New York. N. Y. State Coll. Agr. News Letter (May 9): Reported from Erie County, in western New York, that the striped cucumber beetle has emerged from hibernation quarters, as several of the beetles were caught in a light trap on the night of May 5. That day a maximum of 90° F. was recorded in the southern part of the county.

Virginia. H. G. Walker and L. D. Anderson (May 25): Many fields of cucurbits in the Norfolk region have been heavily infested with the beetles, while other fields have been practically free of injury.

South Carolina. J. G. Watts (May 25): This insect has been present in the Blackville area in relatively small numbers, and much less numerous than the spotted cucumber beetle.

Georgia. T. L. Bissell (May 23): Striped cucumber beetles were taken at lights at Experiment.

Ohio. N. F. Howard (May): Large numbers of striped cucumber beetles were observed on volunteer squash plants that had come up in a plowed field at Columbus, owing to the very early spring. They were so numerous that the small squash plants had been almost devoured when discovered on May 5. On the same day reports from South Point indicate the cucumber beetle as being extremely numerous and injurious to early cantaloups and cucumbers. Petals had fallen from apple and other fruit several days before the beetles were discovered. Undoubtedly the beetles had been forced to leave the blossoms 2 weeks or more earlier than usual.

Mississippi. C. Lyle (May 24): Heavy infestations on cucumbers, melons, and other crops were observed in Harrison, Jackson, Lauderdale, and Tate (northwestern Mississippi) Counties. The heaviest infestation in several years is present on cucumbers in the vicinity of Wiggins, Stone County.

Louisiana. L. O. Ellisor (May): The striped cucumber beetle is very abundant on cucumbers and melons in southern Louisiana.

Missouri. L. Haseman (May 23): This beetle was first observed at Columbia as fruit trees began to come into bloom ahead of the early April freeze and beetles in scattering numbers have been observed almost continuously since that time but, with very little gardening under way to date, there have been practically no reports of the beetle on cucumbers and related crops.

Nebraska. M. H. Swenk (May 20): Became numerous at lights in Lancaster County after the middle of May.

Utah. G. F. Knowlton (May 23): A report from Moab, in southeastern Utah, indicates this pest causing severe damage to melons and cucumbers.

GARDEN FLEA HOPPER (Halticus citri Ashm.)

Indiana. J. J. Davis (May 23): Garden flea hoppers were damaging greenhouse cucumbers at Terre Haute in February. This is the first report ever received of injury by this insect in greenhouses.

GARDEN SPRINGTAIL (Bourletiella hortensis Fitch)

Connecticut. N. Turner (May 24): A springtail, probably of this species, was locally abundant injuring cucumber seedlings at Southington, in western Connecticut.

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

South Carolina. J. G. Watts (May): There has been relatively little increase in beetle population in Barnwell County, in the southwestern part of the State, since harvest. Damage is not serious.

Alabama. F. E. Guyton (April 27): In 1937 this insect was observed for the first time in Alabama. Larvae were seen on asparagus this year at Auburn on April 27.

Indiana. J. J. Davis (May 23): The common asparagus beetle reported on May 21 as having destroyed 25 percent of a 16-acre field of asparagus at Fort Wayne, in northeastern Indiana.

Colorado. J. H. Newton (May 23): Adults and eggs abundant in certain fields near Denver on May 18.

Utah. G. F. Knowlton (May 4): Adults and eggs abundant in one field of asparagus at Merriott in Weber County, and are present in a field south of Sunset. (May 26): Adults and eggs are abundant on asparagus at Clearfield and Sunset, but larvae are scarce.

Washington. C. W. Getzondaner (May 10): The asparagus beetle attracts more attention each year in the Puyallup Valley in west-central Washington.

M. H. Hatch (May 25): This species has within the last few days occurred at Renton and Bothell, this being the first occurrence this far north in western Washington.

TURNIP

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Ohio. N. F. Howard (May 23): Heavy infestation of turnip aphids occurred on a patch of turnips near South Point.

CELERY AND CARROTS

CARROT WEEVIL (Listronotus latiusculus Boh.)

New Jersey. J. B. Schmitt (May 24): The carrot weevil is doing considerable damage to celery on the muck area in Bergen County, in north-eastern New Jersey, and is injuring carrots as far south as Vineland.

ONIONS

ONION THRIPS (Thrips tabaci Lind.)

Connecticut. N. Turner (May 23): A few nymphs and many adults on 10 acres of set onions in Hartford County. More than usual are present for so early in the season.

Virginia. H. G. Walker and L. D. Anderson (May 25): Onion thrips are beginning to appear on onions in rather injurious numbers in the Norfolk area. Some fields of cabbage are becoming rather heavily infested with what is probably the onion thrips.

Florida. J. R. Watson (May 23): Thrips have been unusually injurious, including the onion thrips on onions, owing to the unusually hot and dry weather of the last month.

Mississippi. C. Lyle (May 24): Several reports recently from southeastern Mississippi of heavy infestations of thrips on onions.

California. J. Wilcox (May 4): The tops on one 4-acre field of large onions at Artesia, in southern California, show severe damage and the grower estimates that most of the crop will be lost. A 4-acre field of younger onions, although not showing much damage, is heavily infested.

STRAWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus Say)

Delaware. L. A. Stearns (May 17): Unusually abundant and damaged crop severely in Sussex County, causing considerable injury to blackberries in plantings near strawberry fields.

Maryland. E. N. Cory (April 27): Reported on strawberries in Prince Georges and Somerset Counties.



Virginia. L. D. Anderson and H. G. Walker (May 25): Since our observations on April 15 the strawberry weevil became quite active in a number of strawberry fields in the northern part of Accomac County on the Eastern Shore and has cut out about 60 percent of the buds in several of the fields examined. Although these weevils only cut about 15 percent of the buds in a strawberry field at Onley, in Accomac County, they cut over 90 percent of the buds in a small planting of dewberries nearby.

North Carolina. W. A. Thomas (May 20): The new generation began emerging from the pupal stage the latter part of the first week of May in the Chadbourn area. This is approximately 2 weeks earlier than usual.

Kansas. H. R. Bryson (May 28): The strawberry weevil was reported on May 25 as causing damage in one locality north of Blair in Doniphan County, in northeastern Kansas.

A CHRYSOMELID (Timarcha intricata Hald.)

Washington. W. W. Baker (May 4): Reported from Rochester and Grand Mound, in southwestern Washington, as attracting more attention than usual on strawberries.

STRAWBERRY LEAFROLLER (Ancylis comptana Froel.)

New York. N. Y. State Coll. Agr. News Letter (May 9): Reported from Suffolk County, in eastern New York, that strawberry leafrollers were noted in a strawberry plantation on May 2.

Indiana. J. J. Davis (May 23): Strawberry leafroller was quite abundant and destructive the last 2 weeks at Knightstown and Gary, in eastern and northwestern Indiana, respectively.

Kansas. H. R. Bryson (May 28): Strawberry leafroller is more abundant in northeastern Kansas than for several years and is causing severe injury. Reported injuring strawberries at Grantsville.

Utah. G. F. Knowlton (May 12): Strawberry leafroller moths are abundant at Riverdale and Providence, in northern Utah.

APHIDS (Aphididae)

Virginia. H. G. Walker and L. D. Anderson (May 25): A strawberry field near Norfolk was found to be heavily infested with the strawberry root louse (Aphis forbesi Weed). Many of the plants have been killed and the others are sick and unthrifty, owing to the injury caused by this pest. Ants are abundant in this field where they are attending these aphids and the ants have honeycombed the ground around the roots of the infested plants.

Oregon. D. C. Mote (May): Aphids reported common in all stages on strawberries in the Willamette Valley.

COMMON RED SPIDER (Tetranychus telarius L.)

Virginia. H. G. Walker and L. D. Anderson (May 25): These pests continued to be abundant and to cause considerable damage in a number of strawberry fields in Norfolk and Princess Anne Counties in May.

North Carolina. W. A. Thomas (May 14): The red spider continues to give considerable trouble to the berry growers in the area around Chadbourn. Some of the fields have been so seriously affected that no efforts will be made to carry the plants over, but they will be turned under as soon as the picking season is over. Control measures are being employed by a few growers.

Mississippi. C. Lyle (May 24): Strawberry plants heavily infested with these mites were sent in on May 10 from Moselle, Jones County, in southeastern Mississippi.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Cano)

California. J. C. Elmore (May 11): The pepper weevil is more numerous than usual on black nightshade (Solanum nigrum). Larvae and pupae are common in nightshade berries on the ground in the Bellflower district, in southern California.

BEETS

HOP FLEA BEETLE (Psylliodes punctulata Melsh.)

Utah. G. F. Knowlton (May 4): Damage to sugar beets has been observed at Farr West, Hot Springs, and Merriott, in Weber County. (May 10): This insect is damaging sugar beets at Mapleton and Woods Cross.

H. E. Dorst (May 28): The hop flea beetle population on sugar beets in northern Sevier Valley averages about 3 per square foot, as compared with 15 to 18 in 1937. No damage has been observed. Some damage is noticeable on young sugar beets near Garland and Corinne, where the population averages about 16 per square foot of beet row. The long distance movement of beet leafhopper into Sevier Valley averages in population about 18 per 100 square feet of beets, as compared to approximately 300 per 100 square feet in 1937. A few migrants were found as far north as Lehigh on May 26. The movement of the pest from the local breeding areas and northern Utah started on May 27.

TOBACCO

TOBACCO FLEABEETLE (Epitrix parvula F.)

Maryland. E. N. Cory (May 24): The tobacco fleabeetle was reported doing serious damage to tobacco beds in Anne Arundel, Prince Georges, and Charles Counties, in central and southern Maryland.

South Carolina. N. Allen, J. W. Humphreys, and D. B. Lieux (May 23): Injury to plants in the field in Florence, Marion, and Horry Counties, in northeastern South Carolina, has been less severe than in 1936 or 1937, owing apparently to fewer beetles and to more favorable weather conditions for plant growth at transplanting time. On May 17 a brood of newly emerged beetles was severely injuring plants in plant beds, although transplanting to the field was practically complete.

Tennessee. G. M. Bentley (May 24): Reported as attacking tobacco at Clarksville, in northwestern Tennessee.

L. B. Scott (May 19): The tobacco flea beetle was normally abundant in tobacco plants in the north-central region but has not appeared in normal numbers on transplanted tobacco. Continued cool, wet weather in May probably interfered with their activities.

GREEN JUNE BUG (Cotinis nitida L.)

Pennsylvania. H. E. Hodgkiss (May 25): Grubs of this pest were causing severe injury to tobacco beds in Lancaster County on May 13.

TOBACCO BUDWORM (Heliothis virescens F.)

South Carolina. N. Allen, J. W. Humphreys, and D. B. Lieux (May 23): The first budworm larva was observed in Florence County on April 25. During the first week in May, when the plants were just becoming well established in the field, infestations were sufficient to require control measures. This is unusually early for budworm infestation in the field.

Florida. F. S. Chamberlin (May 11): Infestations of the budworm in tobacco fields in Gadsden County, in western Florida, appear to be about normal.

HORNWORMS (Protoparce sp.)

Maryland. E. N. Cory (May 1): Large numbers of pupae being turned up by plows in last year's tobacco fields. Infestation seems to be heaviest in Anne Arundel and Charles Counties.

South Carolina. N. Allen, J. W. Humphreys, and D. B. Lieux (May 23): The first hornworm eggs were observed on May 4 at Florence. By May 23 hornworm larvae were sufficiently abundant to warrant control measures. The infestation is abnormally severe for this early in the season.



CORN ROOT WEBWORM (Crambus caliginosellus Clem.)

Tennessee. L. B. Scott (May 19): The corn root webworm is very prevalent in north-central Tennessee in soil that had not been worked for 2 years or more. Damage is very severe, reaching 100 percent in untreated fields.

GARDEN FLEA HOPPER (Halticus citri Ashm.)

Florida. F. S. Chamberlin (May 23): The garden flea hopper continues to be unusually abundant in crops of shade-grown tobacco in Gadsden County.

TOBACCO THRIPS (Frankliniella fusca Hinds)

Florida. F. S. Chamberlin (May 17): Thrips are abundant and are causing some damage to shade-grown tobacco in Gadsden County.

C O T T O N   I N S E C T S

BOLL WEEVIL (Anthonomus grandis Boh.)

South Carolina. J. G. Watts (March, April, and May): Taken in very small numbers at Blackville, in southwestern South Carolina, in late March, and in April and May. The first were taken on March 23. None found on cotton.

F. F. Bondy (May 30): Counts at Florence, in the northeastern coastal plain, indicate that there are large numbers of boll weevils in cotton fields, as many as there were last year and more than in 1935 or 1936.

Georgia. P. M. Gilmer (May 22): At Tifton, in southern Georgia, drought and cool weather have delayed weevil emergence from hibernation and growth of cotton during the last few weeks. Although weevils have diminished in the fields, there are enough to cause severe injury.

W. L. Lowry (May 28): Weevils are plentiful in most fields of Sea Island cotton in Lowndes and Echols Counties, in southeastern Georgia. Punctured squares are evident and full-grown larvae were found during the week. Weevils are scarce in the few fields where the stalks were destroyed early last fall and the fields cleaned up.

Florida. C. S. Rude (May 21): Showers have started the cotton squaring, and weevils in the fields have increased at Gainesville and in northern Florida. (May 28): Weevils are more abundant than during recent years.

Louisiana. B. A. Osterberger (May 24): Boll weevils reported attacking very small squares in some of the plots at the University Farm at Baton Rouge, in south-central Louisiana. This is the first record of adult boll weevils reported to the Department.

R. C. Gaines (May 27): At Tallulah, in Madison Parish, north-central Louisiana, more weevils were taken and more found in the field during the latter part of May than last year, despite the fact that emergence from hibernation cages has been lower.

Texas. F. L. Thomas (May 20): Boll weevils have been found in four of five fields examined in Hidalgo County, in southern Texas. A maximum infestation of 10 percent was found in one field. In Nueces County, in southeastern Texas, an 8-percent infestation was found and in Brazos County, in the eastern part of the State, large numbers of weevils were counted in a field of newly chopped cotton. (May 25): The infestation in Hidalgo County has doubled during the last week and now averages 12 percent, with a maximum infestation of 24 percent of the squares punctured. All fields examined found to be infested. Approximately 400 weevils per acre found in cotton of presquare age in fields of Brazos, Jackson, and Victoria Counties, in eastern and southeastern Texas.

K. P. Ewing (May 14): Eight percent of the squares were infested in one field examined near Odem, in southeastern Texas. No other weevils were found in the vicinity or at Robstown, in Nueces County. (May 28): Weevils are abundant in fields in the Lavaca River bottoms, Jackson County. An average of 4.59 weevils per 100 plants, or over 800 per acre, were found in the 13 fields examined this week. Weevils are scarce in open-prairie sections of Calhoun County, in southeastern Texas.

R. W. Moreland (May 28): There has been an emergence from hibernation cages of 3.75 percent to date, as compared to 5.25 percent in 1937 and 2.04 percent in 1936 during the same period, at College Station, in eastern Texas. Weevil populations in the fields examined are practically the same as last year.

SALT-MARSH CATERPILLAR (Estigmene acrea Drury)

Georgia. S. B. Penne (May): This outbreak at Vienna in Dooly County, in southwestern Georgia, is the second severe one reported from this State. The other was near Donalsonville, Seminole County, in the same part of the State.

Texas. F. L. Thomas (May 25): Salt-marsh caterpillars are reported to be causing some injury to cotton in southern Texas.

K. P. Ewing (May 21): Many fields of cotton in Calhoun County (Gulf coast area) were infested with salt-marsh caterpillars. (May 28): This insect is very widespread over the whole county and many complaints have been received of damage to cotton and vegetable crops. Infestation is more widespread than noticed before.

COTTON LEAF WORM (Alabama argillacea Hbn.)

Texas. F. L. Thomas (May 25): Reports from Nueces and Calhoun Counties indicate that some of the early appearing leaf worms are "webbing up."

K. P. Ewing (May 20): The first cotton leaf worm, about one-third grown, was found on May 2 in Calhoun County in stubble cotton. This is the earliest record in recent years. Three full-grown larvae and an empty pupal case were found today on cotton in Calhoun County, indicating the appearance of the second generation. (May 28): Only one additional infestation was found this week. This makes a total of four infestations found in Calhoun County, and one in Nueces County.

PINK BOLLWORM (Pectimophora gossypiella Saund.)

Texas. A. J. Chapman (May 21): At Presidio, in the Big Bend area, the emergence of moths in the hibernation cages was much higher during May last year than for the same period this year. There is an unusually large amount of "Zoca" cotton, which is squaring and blooming profusely and is heavily infested. This will serve to build up the population that will later migrate to cultivated cotton. (May 28): It appears now that the peak of emergence from hibernation is over.

COTTON FLEA HOPPER (Psallus seriatus Reut.)

Mississippi. R. L. McGarr (May 28): Flea hoppers in the vicinity of State College, northeast of the central part of the State, increased from 0.5 per 100 plants on May 14 to 5.0 per 100 plants on May 28.

Louisiana. R. C. Gaines (May 28): At Tallulah, in northeastern Louisiana, sweepings of evening primrose and other weed hosts indicate that flea hoppers are much less abundant than last year.

Texas. F. L. Thomas (May 6): Flea hoppers are increasing on their preferred weed host plants in south-central Texas, as cotton is at present too small to be attractive. Hatching is general in northern Texas. (May 13): The hatch of flea hoppers to date from croton weeds collected in eight counties of south-central Texas has been less than average, not only for the first 2 weeks in May but also for the season. The hatch from similar weeds collected from four counties in northern Texas and caged at the Denton substation was twice as great during the last week of April as that in central Texas for the same period. (May 20): Flea hoppers are increasing on cotton in the lower Rio Grande Valley, the coastal areas, and in the Brazos River Valley. They already occur in sufficient numbers in some fields to justify application of control measures. Infestation reached a maximum of 92 per 100 terminal buds at Chapman Ranch in Nueces County. The average flea hopper infestation in 5 fields examined in Nueces County was 48 per 100 buds. The number of hoppers on horsomint in Calhoun County has increased almost 100 percent over the previous week. Screen traps in the Brazos bottoms show that flea hoppers are still entering the cotton



fields to augment the present count of 9 per 100 buds. (May 25): Screen-trap records in Burleson County, in southeastern Texas, indicate that flea hoppers continue to migrate into cotton fields from native host plants. A slight increase in the population of nymphs was noted during the past week.

K. P. Ewing (May 14): The peak of emergence of cotton flea hoppers from 39 hibernation cages under observation at Port Lavaca was during the last 5 days of April and the first 4 days of May, which is later than ever recorded in southern Texas. The field infestations show considerable increase over previous weeks. On May 13 sweepings made in four fields of horsemint in Calhoun County showed almost a 100-percent increase over the week before. (May 28): The flea hopper population in cotton fields in Calhoun County remained about the same as last week. Control measures have been necessary in some fields in Nueces County.

R. W. Moreland (May 28): At College Station as many as 12 nymphs per 100 cotton terminals were found in river-bottom fields.

#### TARNISHED PLANT BUG (Lygus pratensis L.)

Georgia. P. M. Gilmer (May 22): A few tarnished plant bugs were present on cotton in the vicinity of Tifton, in southern Georgia.

Mississippi. R. L. McGarr (May 28): At State College a large increase in the tarnished plant bug population on fleabane and other weeds was noted this week. The catch per 100 sweeps was 1,100 adults and 2,300 nymphs.

Louisiana. R. C. Gaines (May 28): Tarnished plant bugs are becoming abundant on weeds in the vicinity of Tallulah, in Madison Parish.

Arizona. T. P. Cassidy (May 14): The weekly sweeping records in the Tucson district still show a rather heavy infestation of Lygus spp. in alfalfa. One field showed 45 per 100 sweeps.

#### COTTON APHIDS (Aphididae)

South Carolina. J. G. Watts (May): The first specimens of the cowpea aphid (Aphis medicaginis Koch) were observed on cotton on April 25. Since then there has been little rain and, as a result, this insect has increased rather rapidly. Its numbers at present are not serious but it may develop into destructive numbers with continued dry weather.

C. F. Rainwater (April 30): The three species of root aphids (Trifidaphis phaseoli Pass., Rhopalosiphum subterraneum Mason, and Anuraphis maidi-radicis Forbes) are present and causing considerable damage to the stands of cotton in Florence County. It was necessary to replant some fields; in others young seedlings were badly stunted.

A. maidi-radiciis was also found on corn and volunteer soybeans.  
(May 28): Root aphids continue to damage cotton.

Georgia. P. M. Gilmer (May 22): During the latter part of April and the first part of May cotton aphids (Aphis gossypii Glov.) appeared in some numbers at Tifton but at present there are almost none.

Florida. C. S. Rude (May 27): There are a few cotton aphids in some places near Gainesville, but they are not serious. Parasites seem to be holding them in check.

Mississippi. R. L. McGarr (May 28): At State College cotton aphids are common in most of the cotton fields but parasites and predators are rapidly reducing their numbers.

Arizona. T. P. Cassidy (May 7): A very heavy infestation of aphids, which is causing concern to the grower, has developed in a limited acreage of cotton at Marana, Pima County, in south-central Arizona. Both parasites and predators are beginning to appear. (May 28): Cotton is rapidly recovering from this infestation.

#### THRIPS (Thysanoptera)

South Carolina. J. G. Watts (May 25): The tobacco thrips (Frankliniella fusca Hinds), the flower thrips (F. tritici Fitch), and Sericothrips variabilis (Beach) are doing less damage than normal for this season of the year in Barnwell County, in the southwestern section of the State.

C. F. Rainwater (May 7): The tobacco thrips and onion thrips (Thrips tabaci Lind.) were causing some local injury to cotton in the vicinity of Florence the last week of April. (May 30): Thrips are fewer in number because of rains but many cotton fields show severe damage.

Mississippi. E. W. Dunnam (May 28): At Stoneville, in the Delta section, thrips appear to be fairly abundant in some fields, and some debudding has taken place.

Louisiana. C. O. Eddy (May): The flower thrips has been abundant on cotton for 2 or 3 weeks but there have been few tobacco thrips on cotton, although this species was destructive last year.

Texas. R. W. Moreland (May 28): In Brazos and Burleson Counties considerable injury has been caused by thrips, but cotton is overcoming this injury.

F O R E S T   A N D   S H A D E - T R E E   I N S E C T S

CANKERWORMS (Geometridae)

Maine. H. B. Peirson (May 15): Spring cankerworm (Paleacrita vernata Peck) is abundant in Kennebunkport.

New Jersey. C. W. Collins (May 24): Although cankerworms are generally much less abundant in the vicinity of Morristown than for the last few years, defoliation of elm and ash by the fall cankerworm (Alsophila pometaria Harr.) in Chatham and Florham Park has been reported.

New York. J. V. Schaffner, Jr. (May 23): In Nassau and Westchester Counties the fall cankerworm is very common. Severe defoliation on several trees in one locality along the Hutchinson River Parkway was noticed. Considerable control work is being done in both counties.

Pennsylvania. E. J. Udine (May 21): Unusual numbers of spring cankerworms are defoliating basswood and oak at Newville, Cumberland County.

Ohio. T. H. Parks (May 21): The spring cankerworm is again injurious in about 28 western Ohio counties. Complete defoliation has occurred on some unsprayed farmyard apple trees and on elms along stream banks and in certain areas where the infestation is heaviest. At Columbus the insect has not caused severe injury but has increased perceptibly during the last year. In the wooded areas, hickories, ash, hackberry, and a few other forest trees show the effects of feeding by other species of spanworms.

J. N. Knull (May 30): Many of the deciduous trees in the section around Clifton have been badly defoliated by cankerworms.

Indiana. J. J. Davis (May 23): Spring cankerworm has been unusually abundant from near Indianapolis, in the center of the State, to the northern tier of counties. The first reports came in on May 7 and frequent reports have been received since. Each year for the last 4, the reports of cankerworm abundance have noted increasing infestation and spread. The following report on May 14 from Wabash is typical. The reporter recorded the first appearance of the cankerworms on the elms in one corner of his timber acreage 4 years ago. They gradually spread until this year they have defoliated all elms in the entire area and are going over to other trees. The elms stripped of foliage 4 years ago are nearly all dead.

Illinois. W. P. Flint (May 23): Spotted damage has occurred over the northern two-thirds of Illinois, with the most severe damage in the northwest third of the State. The damage is very spotted, a few cities having almost all trees infested and other cities and towns within probably 25 miles showing practically no injury. Single pieces of woodland or small areas of woodland along streams have been severely



damaged, while  $\frac{1}{4}$  mile away little damage had occurred.

Kentucky. W. A. Price (May 28): Cankorworms defoliated elm trees in the vicinity of Georgetown and Paris.

Michigan. R. Hutson (May 26): Spring cankerworms are very numerous at Sholby, Swartz Creek, Mount Clemens, Ionia, Owosso, Corunna, and Lansing.

Iowa. H. E. Jaques (May 25): Many orchards and a large number of elms in homo plantings, as well as in the woods, have suffered severely throughout southeastern Iowa from the heavy infestation of cankerworms. While both spring and fall cankerworms are involved, our examinations indicate that the spring cankerworm is much more abundant. Many neglected orchards, as well as elm trees, are now wholly defoliated.

Missouri. L. Haseman (May 23): Spring cankerworm infestation reported a month ago has passed the peak of development. Reports indicate that it has been pretty general throughout the State but apparently central Missouri has been more severely infested than other parts. Many elm and hackberry trees at Columbia have been practically denuded of foliage.

Nebraska. M. H. Swenk (May 20): The outstanding shade tree pest in Nebraska was the spring cankerworm. Elm, hackberry, apple, and other shade and fruit trees, and, in one instance, grapevines were the subjects of injury. Complaints of injury began coming in on April 27, and have continued to date.

Kansas. J. R. Horton (May 3): Spring cankerworms occurred in outbreak numbers during the last week of March. Injury is most noticeable on elms where the ragged condition of the leaves is becoming evident.

H. B. Hungerford (May 23): Spring cankerworms are doing considerable damage in some sections of Lawrence, and some orchards in the vicinity have been completely defoliated.

H. R. Bryson (May 23): Cankerworms have caused considerable damage to elms and apple trees in various localities in eastern Kansas. The infestations are spotted and local.

Oklahoma. F. A. Fenton (May 20): The spring cankerworm is reported on apples at Bixby.

#### FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

Connecticut. W. E. Britton (May 21): A few larvae about half grown were reported feeding on linden at New Haven. I have observed one colony feeding upon Rosa hugonis in my garden. A few caterpillars have been seen in other parts of Connecticut.

New England. E. P. Felt (May 24): Forest tent caterpillars occur in small

numbers in southern Connecticut, and in variable numbers further north along the Connecticut River Valley, from Northampton, Mass., to Hanover, N. H. There is a somewhat general infestation, the caterpillars being extremely abundant in parts of New Hampshire and adjacent Vermont, with a probability of extensive defoliation of sugar maples in unsprayed areas.

New York. J. V. Schaffner, Jr. (May 12): Forest tent caterpillars are abundant in many localities in Broome and Delaware Counties. Several woodland areas and sugar orchards are seriously infested.

Michigan. R. Hutson (May 26): Very numerous in the vicinity of Hale, in Iosco County.

Utah. G. F. Knowlton (May 16): This insect is damaging apple foliage in one orchard at Logan.

WESTERN TENT CATERPILLAR (Malacosoma pluvialis Dyar)

Washington. M. H. Hatch (May 23): A great abundance of these caterpillars is reported between Seattle and Everett and on southern Whidby Island, alder, apple, and cherry trees being stripped.

EIGHT-SPOTTED FORESTER (Alypia octomaculata F.)

Kansas. H. B. Hungerford (May 23): This pest is more abundant in the State than I have seen it in a number of years.

GYPSY MOTH (Porthetria dispar L.)

Maine. H. B. Peirson (May 15): Heavy hatching of these caterpillars in Augusta and Gardiner, south-central Maine, has occurred. Complaints are being received of their spinning down onto houses.

Massachusetts. H. L. Blaisdell (April 29): A number of egg clusters were reported in Russell, where caterpillars were hatching about 10 days earlier than last season.

Connecticut. H. L. Blaisdell (April 29): A few caterpillars were reported as hatching in Canaan.

Pennsylvania. H. L. Blaisdell (April 29): Larvae found hatching on a fruit tree in Inkermann on April 18. Additional hatching records received later in the week from an infested area in the Susquehanna Valley. Some infestation found in 20 townships. Nearly 90 percent of the egg clusters located in those within the generally infested area, at Plains, Jenkins, Pittston, and Spring Brook.

ASH

A SAWFLY (Tomostethus multicinctus Rohw.)

Virginia. C. R. Willey (May 11): On April 20 a report was received of sawflies defoliating ash trees several miles down the Mattaponi River from Ayletts. The pest had defoliated the ash trees on this place for several seasons and adults were now swarming around the trees. By May 11 the larvae had defoliated unsprayed trees and had pupated.

A PLANT BUG (Neoborus amoenus Reut.)

Indiana. J. J. Davis (May 23): A plant bug was reported damaging the terminal leaves of ash twigs at Clayton, Danville, and Noblesville on May 13 and 14, all located in the central part of the State.

Ohio. R. H. Davidson (May 11): This plant bug is doing considerable damage to ash in the vicinity of Columbus.

BEECH

BEECH SCALE (Cryptococcus fagi Baer.)

Maine. H. B. Peirson (May 1): A great increase in the intensity of the outbreak of beech scale in Washington and Hancock Counties, with considerable dying of the trees, has been noted.

BIRCH

BRONZED BIRCH BORER (Agrilus anxius Gory)

Maine. H. B. Peirson (May 1): Practically all ornamental white birch in cities in the southern third of the State has been destroyed or is dying from attacks of this insect.

Iowa. C. J. Drake (May 27): This insect is seriously damaging birch trees in Leon, Decatur County. The adults are now emerging in fairly large numbers in the city.

ELM

ELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

Connecticut. W. E. Britton (May 21): Overwintering adults have been received from Plantsville, Vernon Center, and two lots from East Hartford.

Kentucky. W. A. Price (May 28): Elm leaf beetles are numerous in the vicinity of Lexington, where eggs began hatching about May 5.

California. C. S. Morley (May 11): This beetle is showing up and doing



some damage to the elm trees in Kern County.

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus Marsham)

Ohio. A. Johnson (April 22): Fragments of beetles taken from woodwork in a newly constructed house at Youngstown. (Det. by M. W. Blackman.)

EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

Ohio. T. H. Parks (May 24): This insect is causing the usual number of inquiries from residents in Columbus and other cities.

Indiana. J. J. Davis (May 23): Destructively abundant in many regions of the State, particularly in the northern half. Obviously this is a pest that must be given considerable attention from now on. It has been gradually spreading and increasing in destructiveness for several years.

Illinois. W. P. Flint (May 23): This scale has been reported from several towns in central and north-central Illinois.

Colorado. G. M. List (May 28): There has been a very low winter mortality and the scales are beginning to attract attention. Many trees in northern Colorado towns will be seriously injured.

A SCALE INSECT (Phenacoccus dearnessi King)

Connecticut. W. E. Britton (May 21): Elm twigs brought in from West Hartford were lightly infested by this insect.

LARCH

LARCH CASEBEARER (Colcophora laricella Hbn.)

Vermont. H. L. Bailey (May 28): This insect was browning the foliage of larch trees. This was generally noticeable in Rutland County on May 19.

Michigan. R. Hutson (May 26): This insect was reported from Rochester, Howell, and Williamston.

LOCUST

LOCUST LEAF MINER (Chalepus dorsalis Thunb.)

Virginia. W. S. Hough (May 23): Reported from Winchester that this insect is appearing in the adult stage in apple orchards.

Alabama. J. M. Robinson (May 19): The locust leaf miner is infesting about 50 percent of the foliage on black locust plantings on the experiment station grounds at Auburn.

MAPLE

MAPLE BORER (Conopia acorni Cten.)

Ohio. R. H. Davidson (May 4): The first adults of the maple borer were collected on this date. A number of silver maples are infested at Columbus.

NORWAY MAPLE APHID (Poriphyllus lyropictus Kess.)

Virginia. A. M. Woodside (May 21): This aphid is becoming abundant in Staunton.

WOOLLY ALDER APHID (Prociphilus tessellatus Fitch)

Mississippi. C. Lyle (May 24): Heavy infestations on maple trees were recently observed at State College and Sossams, in Oktibbeha County, and at Harpersville, in Scott County.

WOOLLY MAPLE LEAF SCALE (Phenacoccus acericola King)

Georgia. M. Murphey, Jr. (May 24): This insect is very abundant in some locations.

COTTONY MAPLE SCALE (Pulvinaria vitis L.)

Indiana. J. J. Davis (May 23): This insect is very abundant in the northern part of the State.

MAPLE BLADDER GALL (Phyllocoptes quadripes Shim.)

Connecticut. W. E. Britton (May 21): Leaves of silver maple bearing characteristic galls have been received from Hamden, Manchester, New Haven, and Stamford.

OAK

BUCK MOTH (Homileuca naia Drury)

Texas. R. K. Fletcher (May 23): Caterpillars reported as seriously injuring live oak trees in Calhoun County, on the Gulf coast. This caterpillar is also causing severe skin eruptions to those who come in contact with it. (Det. by C. Hoinrich.)

PINE

A SAWFLY (Acantholyda erythrocephala L.)

New Jersey. C. L. Griswold (May 31): First found attacking white pine in Morristown and Somerville in 1936. In 1937 the insect was causing noticeable defoliation on red pine in Oakland Township. Besides the

localities mentioned, I have taken it at Convent, Mahwah, Bernardsville, Springfield, and Mountain View. The first and apparently the only previous record of the species in North America is from Chestnut Hill, Pa., where two males were taken in 1925. (Det. by Grace Sandhouse.)

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

New York. J. V. Schaffner, Jr. (May 20): In Westchester County and on Long Island this pest is very abundant in plantings of Scotch and red pine. Many red pines in plantations and in small ornamental groupings are in a very poor condition, owing to attack by this insect. Full-grown larvae and pupae were noted on May 20.

Michigan. R. Hutson (May 26): Has been reported from Flint, Pontiac, Mount Clemens, and Detroit.

NANTUCKET PINE SHOOT MOTH (Rhyacionia frustrana Comst.)

Mississippi. C. Lytle (May 24): Injury to pine at Jackson, in Hinds County, was reported on May 11.

PINE TUBE MOTH (Argyrotaenia pinatubana Kearf.)

New Jersey. J. V. Schaffner, Jr. (May 23): Moths were noted as quite abundant on white pine trees near Mine Brook on April 25. The tubes of last year are very noticeable on the trees.

A LEPIDOPTERON (Battaristis vittella Busck)

Connecticut. G. H. Plumb (May 23): In some cases larvae are causing primary injury to red and mugho pine buds and young shoots; in other instances living in burrows in dead tips killed by larvae of the European pine shoot moth. Found to be widespread in the State.

A WEEVIL (Hyllobius radicis Buchanan)

Pennsylvania. E. P. Felt (May 24): Found working in Austrian pine in the Philadelphia area.

A SPITTLEBUG (Aphrophora parallela Say)

Connecticut. G. H. Plumb (May 23): Eggs, probably of this species, laid in the terminal end of red pine buds were observed at New Haven in March. The eggs are inserted between the bud scales, causing a marked swelling of that portion of the bud. Many nymphs emerged from collected buds but failed to take on mugho pine to which some of them were transferred.

PITCH TWIG MOTH (Petrova comstockiana Fern.)

New York. J. V. Schaffner, Jr. (May 23): Throughout the pitch pine areas



on Long Island there is a general infestation of this moth. In some localities individual trees or small groups of trees are heavily infested.

SPRUCE

SPRUCE APHID (Aphis abietiana Walk.)

Washington. W. W. Baker (May 9): Abundant in Colorado Blue, Sitka, and Engelmann spruce on Veteran's Hospital Grounds, American Lake.

SYCAMORE

A SCALE INSECT (Stomacoccus platani Ferris)

California. P. Simmons (May 10): This species has been troublesome in Fresno for 3 or 4 years, causing spotting and falling of the leaves of ornamental sycamores, probably the commonest street trees in Fresno. On the above date the insects were massed under loose bark and were beginning to cause yellowish spots on the leaves.

.SYCAMORE LACEBUG (Corythucha ciliata Say)

Ohio. R. H. Davidson (May 12): Lacebugs are doing considerable damage to sycamore trees in the vicinity of Columbus.

California. C. S. Morley (May 11): A report from Kern County states that lacewing tingids have been numerous and are feeding on native sycamore and balm-of-Gilead trees.

I N S E C T S   A F F E C T I N G   G R E E N H O U S E  
A N D   O R N A M E N T A L   P L A N T S

THRIPS (Thysanoptera)

Virginia. H. G. Walker and L. D. Anderson (May 25): Certain varieties of roses at Norfolk have been rather heavily infested with thrips, the thrips crawling inside the buds and causing them to turn brown and die without opening. The same type of injury also occurred on peonies.

Maryland. E. N. Cory (May 24): Thrips are doing considerable damage to light-colored roses.

Florida. J. R. Watson (May 23): Thrips, including the flower thrips (Frankliniella tritici Fitch) on roses and other flowers, have been unusually injurious, owing to the unusually hot and dry weather of the last month.

Mississippi. C. Lyle (May 24): G. L. Bond, of Moss Point, reported observing several heavy infestations of thrips on roses and some light infestations on gladiolus on May 18. H. Gladney reported on May 21 that thrips were very numerous in and doing considerable damage to blossoms of Cape-jasmine in Harrison County.

ROSE LEAF BEETLE (Nodonota puncticollis Say)

Maryland. E. N. Cory (May 24): Reported as being generally prevalent on roses.

Virginia. J. E. Board (May 25): Reported from Fairfax on peony, rose, and grape. A vast number were brought in on a peony flower.

A BUPRESTID (Agrilus coeruleus Rossi)

Ohio. J. N. Knull (May 28): Numerous adults were found feeding on the foliage of honeysuckle (Lonicera sp.) at Columbus.

A BEE (Colletes rufithorax Smith)

District of Columbia. E. A. Back (May 12): Adults flying in large numbers over lawn in the northwestern part of the city and burrowing in soil-filled grass with unsightly mounds of fresh soil. (Det. by G. A. Sandhouse.)

CALIFORNIA RED SCALE (Chrysomphalus aurantii Mask.)

Arizona. C. D. Lebert (May 26): Six small infestations on ornamentals were controlled during the period May 1 to 20. The host plants were euonymus, privet, and oleanders in yard plantings. This completed the survey over all former infestations found in Phoenix and Salt River Valley in the last 3 years, and all surrounding properties.

A LACEBUG (Corythucha cydoniae Fitch)

Mississippi. C. Lyle (May 24): Specimens were received from Waynesboro on May 5, with a report that these insects were heavily infesting shrubs.

OYSTERSHELL SCALE (Lepidosaphes ulmi L.)

South Dakota. H. C. Severin (May 20): This scale passed the winter successfully in eastern South Dakota and is abundant in many areas.

GREENHOUSE STONE CRICKET (Tachycines asynamorous Adel.)

North Dakota. J. A. Munro (June 1): This cricket has become a serious pest in our greenhouses in the Fargo area. It is particularly troublesome on young flax seedlings but also attacks a variety of greenhouse vegetation.

ARBORVITAE

ARBORVITAE LEAF MINER (Argyresthia thuiella Pack.)

Connecticut. W. E. Britton (May 21): Injured twigs were received from Bridgeport and two lots from Hamden.

Virginia. W. J. Schoene (May 23): This leaf miner was observed causing injury to arborvitae plants at Cliffview. This injury is comparatively rare.

ARBORVITAE APHID (Lachnus thujaefilina Del G.)

Virginia. H. G. Walker and L. D. Anderson (May 25): Specimens of what appeared to be the arborvitae aphid were received from the Eastern Shore of Virginia with the notation that they were doing considerable damage in a planting of young pines.

Mississippi. C. Lyle (May 24): Infested arborvitae twigs were received from Kilmichael, in Montgomery County, on May 7.

Oklahoma. F. A. Fenton (May 20): This aphid was reported from Stillwater and Edmond.

BOXWOOD

BOXWOOD LEAF MINER (Monarthropalpus buxi Laboulb.)

Virginia. C. R. Willey (April 20): A few had emerged on April 20, emergence apparently having begun on the 18th at Richmond.

H. G. Walker and L. D. Anderson (May 25): This leaf miner was reported as being rather abundant in several plantings of boxwood in Norfolk.

CEDAR

A LEAF MINER (Argyresthia freyella Wlsm.)

New York. E. P. Felt (May 24): This insect was found infesting red cedar rather abundantly. Specimens were received from Amityville, Long Island.

GLADIOLUS

GLADIOLUS THRIPS (Taeniothrips simplex Morison)

Florida. J. R. Watson (May 23): Thrips, including the gladiolus thrips, have been unusually injurious, owing to the unusually hot, dry weather of the last month.



Indiana. J. J. Davis (May 23): *Gladiolus* thrips were reported destroying a large acreage of *gladiolus* at Bedford on May 18. The flower spikes sent in were already damaged considerably and in another week will be worthless.

#### HOLLY

##### HOLLY LEAF MINER (*Phytomyza ilicicola* Loew)

Connecticut. W. E. Britton (May 21): Two lots of mined leaves have been received from Bridgeport.

E. P. Felt (May 23): The holly leaf miner was reported from Wilton.

Virginia. C. R. Willey (April): On March 11 larvae and pupae were present in leaves collected. On March 19 all of forty-odd specimens taken from leaves brought to the office had pupated. On April 10, in leaves examined on tree and on the ground in a park in Richmond, 100 percent were pupae. By April 19 they were apparently 100-percent emerged and many flies were on the leaves of the new growth.

Kentucky. W. A. Price (May 28): Adults were found in the Lexington area on May 3.

##### HOLLY BUDMOTH (*Rhopobota naevana ilicifoliana* Kearf.)

Oregon. D. C. Mote (May): Emerging and eggs hatching at Astoria on May 9. Eggs and larvae present. Normal injury to holly buds.

#### LILAC

##### LILAC LEAF MINER (*Gracilaria syringella* F.)

Oregon. D. C. Mote (May): Present in the Willamette Valley, commonly causing blotch mines on lilacs. Adults and larvae present, the adults emerging late in March and early in May.

#### NARCISSUS

##### A MOTH (*Xanthopastis timais* Cran.)

Mississippi. C. Lyle (May 24): Severe injury to lily and narcissus plants was reported from Liberty in Anite County on May 19.

#### OLEANDER

##### POLKA-DOT WASP MOTH (*Syntomeida opilais jucundissima* Dyar)

Florida. H. T. Fernald (May): Adults have not been abundant until very recently but now are quite common in the center of the State.

PRIVET

WHITE PEACH SCALE (Aulacaspis pentagona Targ.)

Maryland. C. A. Weigol (May 3): Limbs rather heavily encrusted with this scale causing death of worst infested twigs and branches on a privet hedge at Beltsville. (Det. by H. Morrison.)

Virginia. H. G. Walker and L. D. Anderson (May 25): The white peach scale has been observed rather heavily infesting catalpa, mulberry, and privet at Norfolk.

ROSE

APHIDS (Aphididae)

Massachusetts. A. I. Bourne (May 24): Such shrubs as roses and spiraea were showing a heavy infestation of aphids as early as May 10, unusually early for such a heavy infestation.

Utah. G. F. Knowlton (May 20): The potato aphid (Illinoia solanifolia Ashm.) is present and maturing upon but not yet injuring rose bushes at Salt Lake City and Cottonwood.

California. P. Simmons (May 10): General reports indicate that aphids on rose bushes and other ornamentals in home plantings at Fresno are much more abundant than last spring, when they were abnormally scarce.

ROSE SAWFLY (Caliroa aethiops F.)

Kansas. H. B. Hungerford (May 23): Rose slugs are doing more damage in the State than usual.

ROSE CURCULIO (Rhynchites bicolor F.)

Utah. G. F. Knowlton (May 27): These beetles are abundant on rose bushes examined at Salt Lake and Lohi.

SNOWBALL

SNOWBALL APHID (Anuraphis viburnicola Gill.)

Michigan. E. I. McDaniel (May 9): We received today a batch of viburnum leaves infested with this aphid. This is especially interesting because the aphid is some 30 days early this season.

Colorado. G. M. List (May 28): The snowball aphid is more injurious in northern Colorado than for a number of seasons. Only a few blossoms will open normally.

Utah. G. F. Knowlton (May 17): Two species of aphids, the snowball aphid and the bean aphid (Aphis rumicis L.), are damaging snowball flowers and foliage at Orderville. (May 27): Black aphids are curling leaves and injuring blossoms of snowballs at American Fork and Lehi.

YEW

BLACK VINE WEEVIL (Brachyrhinus sulcatus F.)

Ohio. R. H. Davidson (May 13): On April 20 a number of larvae were reported attacking yew and causing serious damage near Steubenville. Some were collected and reared to adults, the first of which emerged on May 2. They proved to be the black vine weevil.

I N S E C T S   A T T A C K I N G   M A N   A N D  
D O M E S T I C   A N I M A L S

MAN

MOSQUITOES (Culicinae)

Oregon. H. H. Stage (May 21): The first migration of mosquitoes, Aedes aldrichi D. & K. and A. vexans Meig., into the residential section was observed on the evening of May 20, the warmest day to date. This brood was hatched by the Columbia River freshet which reached a height of 15.9 feet on May 5.

BUFFALO GNATS (Prosimulium hirtipes Fries)

Massachusetts. C. N. Smith (May 9): A species of Simuliidae has been causing considerable annoyance to persons in Chilmark, on Martha's Vineyard Island. Since about the first of May the flies have been abundant on warm mornings, causing great discomfort to outdoor workers by their bites. (Det. by A. Stone.)

RABBIT FLEA (Hoplopyllus affinis Baker)

Iowa. C. J. Drake (May 27): Specimens of the common rabbit flea have been received from Hawarden, Sioux County, where a house was badly infested.

THRIPS (Thysanoptera)

California. R. E. Campbell (May 24): In one section of Alhambra, in the southern part of the State, where there are a number of vacant lots, an unidentified thrips began migration in great numbers from the vegetation as it dried up. The thrips invaded houses and caused considerable mental anguish to the householders.



TROPICAL RAT FLEA (Liponyssus bacoti Hirst.)

District of Columbia. Mrs. G. W. Cronyn (May 26): Collected in Washington, D. C., where they were biting man. They were taken from a house where mice have been present. (Det. by H. E. Ewing.)

CATTLE

SCREWORM (Cochliomyia americana C. & P.)

Georgia. A. L. Brody (May 19): A case of true screwworms in the ear of a pig was reported from Quitman.

Florida. A. L. Brody (May 19): Specimens of this pest sent from Lee, in Madison County. This is our first authentic record of the presence of this insect in northern Florida this year.

Tennessee. G. M. Bentley (May 25): Screwworm found at Covington, working in a wound on a mule.

Kansas. E. G. Kelly (May 31): Screwworms were removed from a small calf the last week of December in Comanche County. They were also removed from small calves on March 27 in the same county. They were observed in cattle in Barber and Harper Counties in March, and were reported as very abundant, attacking dehorned cattle and newly sheared sheep in Woodson, Wilson, Montgomery, Elk, and Allen Counties. These last reports came in on May 3 and the species have not yet been determined. Last week several cases of screwworms were heard of from Sumner, Harper, and Kingman Counties.

Texas. D. C. Parman (May 25): Up to April 30 screwworm cases had increased markedly and many cases were occurring on the Edwards Plateau and the Southern Escarpment in Texas. Indications are that an outbreak equal to or greater in severity than the serious one in 1935 will occur in 1938 in this area.

Arizona. D. C. Parman (May 25): On April 30 cases appeared to be rather few and scattered, except in the area about Yuma and Nogales. Screw-worm flies, although not yet so numerous as in Texas, are distributed over the State and conditions favor their rapid increase.

SECONDARY SCREWORM (Cochliomyia macellaria F.)

Alabama. J. M. Robinson (May 17): The secondary screwworm was reported on May 2 as being active in dehorned cattle at Selma, and on May 17 at Prattville.

STABLEFLY (Stomoxys calcitrans L.)

Kansas. R. W. Wells and F. C. Bishopp (May 20): In eastern and central Kansas these flies are now sufficiently numerous to cause livestock some annoyance. In a few instances, herds were observed to be bunching to fight the flies. The number observed per animal, however, was not large, ranging from 5 to 25.

Texas. E. W. Laake (May 23): Stableflies continue to be numerous and troublesome. On the laboratory premises at Dallas from 8,000 to 10,000 were trapped during the last week.

HORN FLY (Haematobia irritans L.)

Georgia. A. L. Brody (May 19): This species has been exceedingly abundant and annoying to cattle at Valdosta during the last month. The average per animal has been as high as 500 to 700. All the steers on the Government experimental farm showed large injured areas due to the bites of this species.

Kansas. R. W. Wells and F. C. Bishopp (May 20): Horn flies are becoming somewhat troublesome in eastern and central Kansas. They range in number from 10 to 50 per animal. The use of fly sprays on livestock has been started during the last week. This, however, is due to the presence of stableflies, as well as horn flies.

Texas. E. W. Laake (May 23): The horn fly population has built up rapidly during the last month. Infestations of 4,000 flies per head are common on cattle near Fort Worth, while 2,000 per head have been noted on cattle at dairies in the vicinity of Dallas.

GULF COAST TICK (Amblyomma maculatum Koch)

Georgia. A. L. Brody (May 19): Reports are that this species is beginning to appear on steers and sheep at Valdosta. The first specimens were found on these animals on May 5. An increase in numbers was noted on May 12.

HORSE

MOSQUITOES (Culicinae)

Kansas. R. W. Wells and F. C. Bishopp (May 20): Although no mosquitoes are reported as being seen in these localities this spring, cases of equine encephalomyelitis have been reported in both Fort Riley and Topeka. These cases were seen by veterinarians and appeared to be authentically diagnosed, although the animals recovered; therefore no brain examinations were possible.

Utah. G. F. Knowlton (May 20): Mosquitoes are abundant and annoying to man and livestock in the fields west of Springville, in Utah County.

Nevada. G. G. Schweis (May 19): During the season of 1937 mosquitoes caused such annoyance in the Lovelock district that the county and city officials have decided on a control project this year. This control will consist of draining the marshy areas where feasible. Where that type of control is not possible the pools will be treated with oil.

BLACK FLIES (Simulium vittatum Zott.)

Iowa. C. J. Drake (May 18): Flies found biting horses' ears in the vicinity of Adel. Suspected that they were the common species of black fly but requested a determination to be certain. (Det. by A. Stone.)

HORSEFLIES (Tabanidae)

Florida. E. A. Back (April 26): Horsefly (Tabanus trifunctus Walk.) present in swarms in annoying and alarming numbers during midday and early afternoon under sheds and porches of houses, stores, and filling stations at Bonita Springs, in Lee County, and at Naples, in Collier County. Flies did not bite, but buzzed so loudly they were mistaken for wasps by travelers. (Det. by A. Stone.)

Texas. E. W. Laake (May 23): Horseflies have been frequently observed during the last month. One specimen of an undetermined tabanid species was taken in the trap at the laboratory at Dallas. Six specimens of Tabanus atratus F. were caught on cattle at our laboratory and in the cattle-fly trap at the Dallas laboratory during the last week. Also a number of Tabanus lincola F. were taken in the trap at the laboratory.

O. G. Babcock (May 23): On May 21 the first appearance of the horsefly was noted in the southwestern section of the State.

HORSE BOTFLY (Gastrophilus intestinalis Deg.)

Texas. W. G. Bruce and F. C. Bishopp (May 23): A few botflies are active in this vicinity (Dallas), ovipositing on horses and mules. Apparently the flies began oviposition about a week ago.

POULTRY

STICKTIGHT FLEA (Echidnophaga gallinacea Westw.)

Texas. O. G. Babcock (May 20): Isolated reports of ~~severe~~ infestations of the chicken sticktight flea.

FOWL TICK (Argas miniatus Koch)

Texas. O. G. Babcock (May 20): A report from Sonora indicates that the fowl tick is increasing rapidly.

TURKEY GNAT (Simulium meridionale Riley)

Mississippi. G. L. Bond (May 18): Those turkey gnats have been quite annoying around wooded swampy areas in southern Mississippi during the last month.

SHEEP AND GOATS

GOAT LICE (Bovicola spp. and Linognathus spp.)

Texas. O. G. Babcock (May 20): These lice are abundant on undipped goats in the vicinity of Sonora, increasing rapidly since shearing. Will be severe in June on undipped goats.

SHEEP BOTFLY (Oestrus ovis L.)

Georgia. A. L. Brody (May 19): Early first-stage larvae were found in the nasal passages of 3 out of 10 goats examined on May 10 at Valdosta.

SHEEP TICK (Mclophagus ovinus L.)

Oklahoma. F. A. Fenton (May 20): Reported from Dustin and El Reno.

GREENBOTTLE FLIES (Lucilia sericata Meig.)

Georgia. A. L. Brody (May 19): An infestation of this species around the tail of a white leghorn hen was found on April 29. The hen was recovering from a heavy infestation of this species.

Tennessee. G. M. Bentley (May 16): Reported by one of our inspectors from Union City, Obion County, on sheep.

SHEEP SCAB MITE (Psoroptes communis ovis Hering)

South Dakota. H. C. Severin (May 20): Sheep scab is much more abundant than usual, especially in eastern South Dakota, where many sheep have been brought in during the last few years.

DOG

AMERICAN DOG TICK (Dermacentor variabilis Say)

Massachusetts. C. N. Smith (April 30): Adults of this tick became very abundant during April, from 60 to 90 being removed from individual dogs after the middle of the month. Larvae and nymphs also became active during the month. Reported from Vineyard Haven, Martha's Vineyard Island.

Virginia. H. G. Walker and L. D. Anderson (May 25): Ticks appear to be moderately abundant, as nearly every dog that is not tied up is infested with one or more ticks. Reported from Norfolk.

Georgia. A. L. Brody (May 19): One male was removed from a dog on May 5. H. M. Brundrett reports the presence of males and females of the species on sheep and steers on May 12 near Valdosta.

Iowa. H. O. Schraeder (May 1): Adults of this species became active as early as May 1 in the vicinity of Ames.



R. W. Wells and F. C. Bishopp (May 19): This tick is numerous in the vicinity of Osceola. About 20 specimens were observed on 1 dog and the ticks are removed from this animal about every 3 days. No cases of spotted fever have been reported in this locality this year.

**BROWN DOG TICK** (Rhipicophalus sanguineus Latr.)

Georgia. A. L. Brody (May 19): Ticks of this species were removed from a dog on May 11 at Valdosta.

**HOUSEHOLD AND STORED-PRODUCTS INSECTS**

**TERMITES** (Reticulitermes spp.)

Massachusetts. C. N. Smith (May 9): Two infestations of houses by termites have been reported in Vineyard Haven. In one case the termites had destroyed the entire framework of a basement window which was in contact with the ground. The adjacent studding was also damaged to an undetermined extent. In the other case a swarm of the winged forms issued from the earth wall of a basement, but no damage to the house has yet been discovered. Termites have not heretofore been regarded as a serious problem on Martha's Vineyard, and inquiry reveals only one previous infestation of a building.

Ohio. N. F. Howard (April 19): Termites swarmed unusually early from stumps and roots under the temporary building at the laboratory at Columbus.

Indiana. J. J. Davis (May 23): The number of inquiries concerning termites in the State have been numerous, probably more than last year.

Illinois. W. P. Flint (May 23): About the usual number of reports regarding termite injury have been coming in from over the State.

**ANTS** (Formicidae)

Mississippi. C. Lyle (May 24): Under date of May 18, G. L. Bond, of Moss Point, wrote as follows: "This species of ant (Solenopsis sacvissima var. richteri Forel.) was first reported from Mississippi early in 1935. Evidently it has been present along the eastern border of Jackson and George Counties and in the adjoining section of Alabama for several years. Since 1935 I have watched its spread and find that it occurs over large areas of new territory every year." J. Milton reported on May 23 that fire ants were very numerous in several localities in central Mississippi. Complaints of this species (Solenopsis xyloni McCook) have also been received from Jackson, in Hinds County, and Hattiesburg, in Forrest County.

Louisiana. B. A. Osterberger (May): Specimens of ants taken in rafters of a residence were sent on April 21 to T. E. Snyder for determination. They were determined as Crematogaster sp. near laeviuscula Mayr.

Nebraska. M. H. Swenk (April 29): Complaints of damage or annoyance in houses by ants (Formicidae) were received from Dodge, Douglas, and York Counties on April 25, April 29, and May 2, respectively. The species concerned in the Dodge County report was the common lawn ant (Lasius niger neoniger Emery) and the one reported from York County was the basement ant (Lasius interjectus Mayr). (April 25): Specimens of the large black carpenter ant (Camponotus herculeanus pennsylvanicus Deg.) were taken from a house in Hamilton County, where they were proving annoying.

Oklahoma. F. A. Fenton (May 20): The red harvester ant (Pogonomyrmex barbatus F. Smith) was reported from Comanche.

Oregon. R. L. Furniss (May 20): C. herculeanus modoc Wheeler began swarming in Portland homes about the 15th of April. C. maculatus vicinus Mayr was not reported until May 17. These carpenter ants are serious pests in the Pacific Northwest, where they often mine extensively in structural timbers.

E. A. Back (April 29): An ant, Liometopus occidentalis Emery, has been present for 5 years in considerable numbers in a mausoleum at Ashland and has been worrying the custodian because of the psychological effect on the vault owners. (Det. by M. R. Smith.)

#### BEETLES (Coleoptera)

New York. E. A. Back (April 20): Cerambycidae (Gracilia minuta F.) collected in warehouse. Determined by W. S. Fisher, who states that this cerambycid is introduced in articles of commerce from Europe.

District of Columbia. E. A. Back (May 20): Adults of a furniture beetle, Hadrobregmus carinatus Say, reared from maple furniture and a maple ox yoke. All wood, heavily infested, had been protected from the weather for years. Was brought infested from eastern Connecticut in 1937. (May 20-25): The rhipiphorid beetle (Pelecotoma flavipes Melsh.) was reared in numbers from the maple ox yoke heavily infested with burrows of H. carinatus.

Florida. E. A. Back (March 29): Many larvae and adults of a furniture beetle, Catorana sp., taken from a winged chair, upholstered in vegetable fiber and covered with cotton fabric, shipped to Washington from Coral Gables, Fla. Upholstering material cut into bits by larvae and cover defaced with exit holes. Owner had had chair during previous residences in Philippine and Hawaiian Islands where Catorana exists. However, Catorana was found by E. A. Back damaging upholstering of furniture in Miami in 1935. (April 25-28): Larvae and adults of the

anobiid beetle, Meogastrallus librinocens Fisher, collected from paper-, cloth-, leather-, and parchment-bound books, both old and new, in libraries at San Antonio and St. Augustine. Infestation severe in both of these localities. At the latter place it was recorded for the first time. A hymenopteron, Heterospilus sp. (det. by C. F. W. Muesebeck) was shaken from a book in St. Augustine and is probably a parasite of M. librinocens, which was heavily infesting the book.

Ohio. J. N. Knull (May 27): Infestations of the powder post beetle (Lyctus planicollis Lec.) in a hardwood floor have been reported from various parts of the State during the last year.

Washington. M. H. Hatch (May 20): L. planicollis has been sent in as injuring furniture at Bellingham and Friday Harbor during the last 2 months. In March 1930 it was reported as injuring pickax handles in Tacoma.

Indiana. J. J. Davis (May 23): Spider beetles (Ptinus fur L.) have been increasingly numerous in the State during April and May. The record of damage is surprisingly low.

Minnesota. A. G. Ruggles and assistants (May 12): Dr. Shepard found about two dozen dead adults of Tribolium madens Charp. clinging to sacks of stored seed corn in a Minneapolis warehouse.

#### PEA WEEVIL (Bruchus pisorum L.)

Oregon. D. C. Mote (May): This species is present in the adult stage in the Willamette Valley. Emergence was on April 29 and oviposition on May 15.

#### HOUSE CRICKET (Gryllus domesticus L.)

New Jersey. E. A. Back (May 14): Crickets established in numbers in an oldtype house in Boonville throughout last winter. Apparently established about the furnace, they crawled up the chimney to the unplastered kitchen, where they congregated behind the warm stove in all sizes and caused great annoyance by chirping.

#### BROWN BANDED COCKROACH (Supella supellectilium Serv.)

District of Columbia. E. A. Back (May 7): All stages found present in an apartment in the northwestern section of Washington. Infestation apparently brought in furnishings from the South several years ago but believed to have been killed out. First record of occurrence in Washington.

#### CRANE FLY (Tipulidae)

Virginia. C. R. Willey (May 16): A correspondent, of Fort Defiance, sent in several dozen specimens on May 7, stating that they were swarming about his place--the lawn, house, trees, and shrubs by millions. They have occurred there for several years but apparently do no damage.